

AD-A040 787

AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 71. F-111F AI--ETC(U)
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UNCLASSIFIED

AMRL-TR-75-50-VOL-71

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1 of 2

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AMRL-TR-75-50
Volume 71



USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

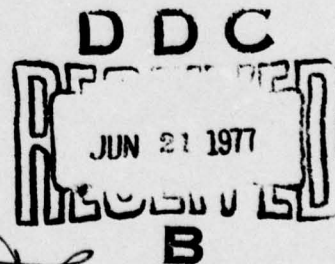
Volume 71 F-111F AIRCRAFT, NEAR AND FAR-FIELD NOISE

NOVEMBER 1975

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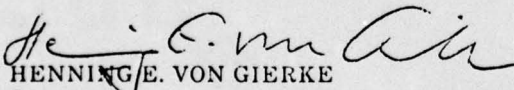
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FOR THE COMMANDER


HENNING E. VON GIERKE
Director
Biodynamics and Bionics Division
Aerospace Medical Research Laboratory

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AMRL-TR-75-56-Vol-71	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: F-111F Aircraft, Near and Far-Field Noise	5. TYPE OF REPORT & PERIOD COVERED Volume 71 of a series	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Robert G. Powell	8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Aerospace Medical Research Laboratory Aerospace Medical Division, Air Force Systems Command, Wright-Patterson AFB, OH 45433	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 62202F 16 7231-04-18	
11. CONTROLLING OFFICE NAME AND ADDRESS Same as above	12. REPORT DATE November 1975	13. NUMBER OF PAGES 158
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) 12 157p.	15. SECURITY CLASS. (of this report) Unclassified	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Noise Noise Environments Bioenvironmental Noise Aircraft F-111F Aircraft		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The USAF F-111F aircraft is a tactical fighter powered by two TF30-P-100 turbofan engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for five engine/power configurations. Near-field data are reported for eight locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and		

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limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723104, Measurement of Noise and Vibration Environments of Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Robert Lee and Mr. Jerry Speakman for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechanics of data processing and Mrs. Norma Peachey and Mr. Mike Patterson for assistance in typing and preparation of the graphics.

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OSC	Ref Section	<input type="checkbox"/>
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INTRODUCTION

The USAF F-111F is a tactical fighter-type aircraft powered by two TF30-P-100 turbofan engines. The aircraft is manufactured by General Dynamics Corp. and the engines by United Aircraft, Pratt and Whitney Division.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the F-111F aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and aerospace ground equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, aerospace ground equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975
2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the F-111F aircraft during ground runup operations of its turbofan engines and aerospace ground equipment. For these tests the aircraft was located on a concrete taxiway at Wright-Patterson AFB, OH with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the power condition. The ground-crew chief selected the power condition and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all of the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the six near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations in the near-field are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the F-111F aircraft at the six ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measure given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTSF-111F Aircraft, Ground Runup, Wright-Patterson AFB, OH
16 September 1974
Tail # 70240*Ground Crew Location*

1	Marshall
2	Ground Communicator
3	Observer
4	FLG Pin Pull
5	MLG Wheel Chock
6	MLG Compartment, Leak Check

Aircraft Engine Operation

A	Both Engines Idle
---	-------------------

Meteorology

Temperature	15.0 C
Bar Pressure	0.767 M Hg
Rel Humidity	75 %
Wind — Speed	Calm

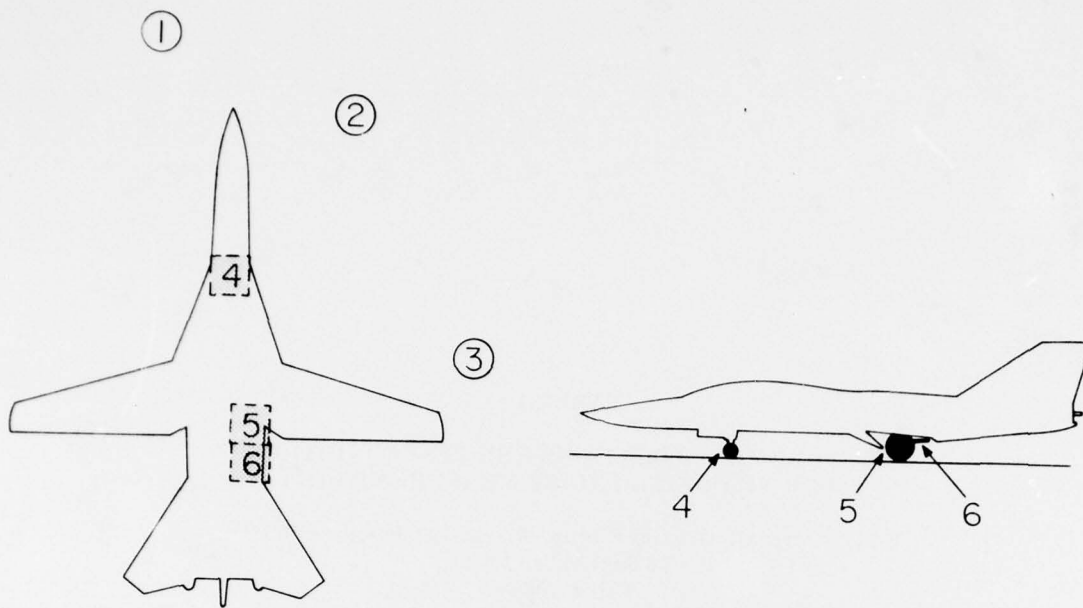


Figure 1. Near-Field Measurement Locations on Taxiway 21, Wright-Patterson AFB, Ohio

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired both near and far-field data during a 1- 2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 75 meter radius semicircle used in surveying the TF30-P-100 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through both engines' exhaust-nozzle exits.

Table 4 provides cockpit readouts of engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wavefronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently presented in data acquired by a fixed height microphone.

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the F-111F aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power levels and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

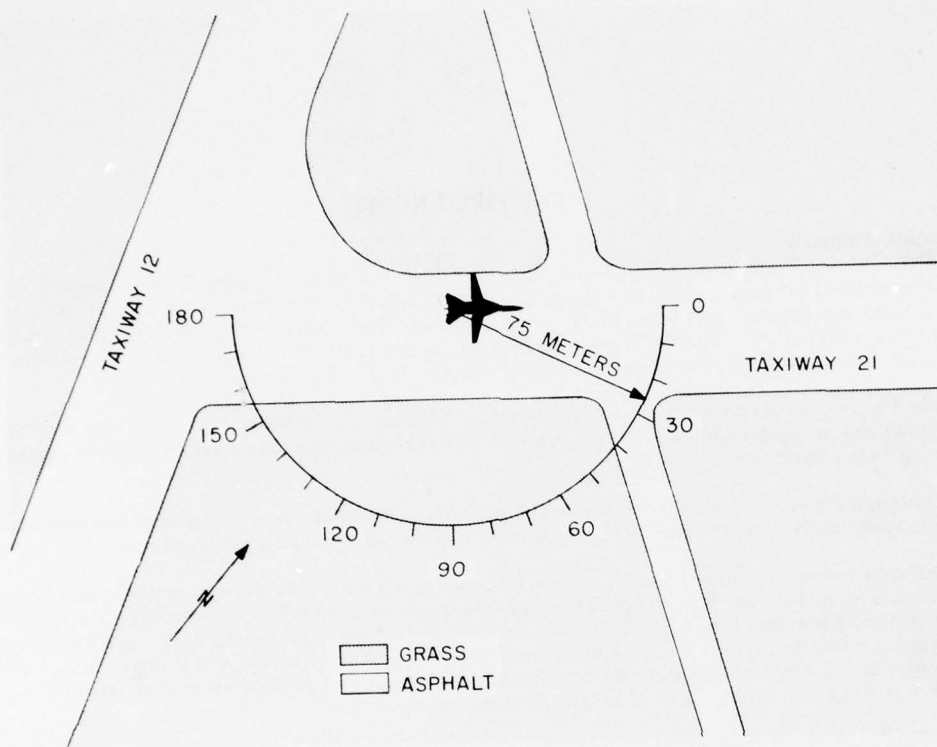


Figure 2. Far-Field Measurement Locations on Taxiway 21, Wright-Patterson AFB, OH

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noises as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables. No data are presented at the 170 degree location for idle power and at the 170 and 180 degree locations for the remaining settings because of turbulent air flow behind the aircraft.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5 and Figure 11 at idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)							IDENTIFICATION:	
1/3 OCTAVE BAND								
2								
NOISE SOURCE/SUBJECT:							TEST 74-079-001	
(OPERATION:							RUN 01	
(F-111F AIRCRAFT								
(GROUND CREW							17 MAY 76	
(NEAR FIELD NOISE LEVELS							PAGE F1	

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)		IDENTIFICATION:					
2							
NOISE SOURCE/SUBJECT:		OMEGA 3.2					
F-111F AIRCRAFT		TEST 74-079-001					
GROUND CREW		RUN 01					
NEAR FIELD NOISE LEVELS		17 MAY 76					
		PAGE J1					
		LOCATION/CONDITION					
FREQ (HZ)		1/A	2/A	3/A	4/A	5/A	6/A
31.5		76	80	84	89	93	91
63		85	86	90	97	97	98
125		86	89	89	94	93	102
250		87	85	86	93	98	100
500		35	83	87	99	104	106
1000		96	101	96	107	105	103
2000		109	115	106	121	113	110
4000		106	108	103	115	109	106
8000		102	105	100	111	105	107
OVERALL		112	117	109	122	116	114

TABLE: MEASURES OF HUMAN NOISE EXPOSURE							IDENTIFICATION:
3							
NOISE SOURCE/SUBJECT: (OPERATION:)							OMEGA 3.2
F-111F AIRCRAFT ()							TEST 74-079-001
GROUND CREW ()							RUN 01
NEAR FIELD NOISE LEVELS ()							17 MAY 76
							PAGE H1
LOCATION/CONDITION							
	1/A	2/A	3/A	4/A	5/A	6/A	
HAZARD/PROTECTION							
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR							
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR							
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)							
NO PROTECTION							
OASLC	111	116	109	122	119	114	
OASLA	112	118	110	123	116	114	
T	3.9	P	5	P	P	2.7	
MINIMUM QPL EAR MUFFS							
OASLA*	84	88	82	94	89	89	
T	480	240	679	85	202	202	
AMERICAN OPTICAL 1700 EAR MUFFS							
OASLA*	77	82	76	88	83	83	
T	960	679	960	240	571	571	
V-51R EAR PLUGS							
OASLA*	81	86	79	92	87	86	
T	807	339	960	123	285	339	
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS							
OASLA*	58	72	66	78	73	72	
T	960	960	960	960	960	960	
H-133 GROUND COMMUNICATION UNIT							
OASLA*	84	89	81	95	88	85	
T	430	202	807	71	240	404	
COMMUNICATION							
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)							
PSIL	97	102	97	109	107	106	
ANNOYANCE							
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PN03)							
TONE CORRECTION (C IN DB)							
PNLT	127	133	125	139	132	130	
C	2	3	3	3	2	2	

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

TABLE 4
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

F-111F Aircraft, Ground Runups, Wright-Patterson AFB, OH
16 September 1974
Tail #702406

Aircraft Engine Operation

Idle	Both Engines 1.04 EPR 65 % RPM, HPC 554 C, TIT 1000 LBS/HR, Fuel Flow
80% Runup	Both Engines 1.44 EPR 80 % RPM, HPC 736 C, TIT 2650 LBS/HR, FF
85% Runup	Both Engines 1.66 EPR 85 % RPM, HPC 838 C, TIT 4150 LBS/HR, FF
85% Runup	#2 (Right) Engine 1.63 EPR 85 % RPM, HPC 852 C, TIT 4200 LBS/HR, FF
Military	#2 (Right) Engine 2.21 EPR 94.8 % RPM, HPC 1086 C, TIT 8100 LBS/HR, FF
Afterburner (Zone 3)	#2 (Right) Engine 2.25 EPR 95 % RPM, HPC 1114 C, TIT 28,100 LBS/HR, FF

Meteorology

Temperature	15.0 C
Bar Pressure	0.767 M Hg
Rel Humidity	75 %
Wind — Speed	Calm

TABLE: MEASURED SOUND PRESSURE LEVEL (D3)																		
1/3 OCTAVE BAND																		
DISTANCE = 75 METERS																		
NOISE SOURCE/SUBJECT:																		
(OPERATION:)																		
(IDLE POWER)																		
(65% RPM)																		
(BOTH ENGINES)																		
(FREE FLOW)																		
F-111F AIRCRAFT																		
TF30-P-100 ENGINE																		
FAR FIELD NOISE																		
METEOROLOGY: 13 C																		
TEMP = .767 M HG																		
REL HUMID = 80 %																		
PAGE 2																		
IDENTIFICATIONS:																		
OMEGA 1.4																		
TEST 75-002-037																		
RUN 01																		
08 MAY 75																		
FREQ (HZ)																		
0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	62<	65<	55<	67<	65<	66<	64<	65<	68<	67<	68<	67<	68<	67<	69<	68<	66<	
31.5	63<	62<	63<	67<	67<	66<	65<	65<	69<	68<	69<	67<	67<	66<	68<	65<	64<	
40	64<		64<	66<	66<	67<	66<	67<	67<	67<	67<	67<	67<	67<	69<	67<	67<	64<
50	65<	68<	68<	66<	66<	67<	65<	65<	68<	66<	66<	68<	68<	66<	68<	68<	66<	
63	69<	70<	70<	68<	69<	69<	69<	69<	70<	70<	69<	70<	70<	71<	72<	72<	69<	
80	74	76	76	75	73	77	76	75	75	77	78	77	78	78	79	76	64<	
100	69<	74	75	75	77	75	73<	74	77	78	79	78	78	79	80	77	66<	
125	63<	70	71	70	67<	67<	68<	68<	71	73	74	73	72	72	74	71	62<	
160	65	71	71	69	65	70	71	72	74	74	75	76	76	75	74	74	63	
200	67	73	72	67	65	66	68	68	71	72	73	74	74	73	71	71	74	61
250	70	74	71	69	67	67	69	68	70	70	70	71	71	71	71	71	74	62
315	69	75	72	71	68	68	65	64	66	67	67	70	73	72	76	74	63	
400	70	75	72	73	68	65	69	64	62	64	66	68	69	70	74	73	63	
500	71	73	73	75	71	67	70	64	67	64	65	67	67	68	70	72	74	53
630	71	72	75	75	70	66	69	64	65	63	65	65	68	68	70	70	60	
800	78	81	85	82	78	75	73	69	68	68	67	67	70	69	70	71	62	
1000	79	81	84	83	79	76	74	69	68	68	67	68	69	67	69	69	60	
1250	78	82	81	81	79	76	75	72	69	65	66	68	68	66	68	67	58	
1600	94	99	98	96	91	85	87	83	81	75	73	74	72	75	79	78	69	
2000	93	98	97	96	91	87	87	84	81	79	78	78	76	79	81	82	80	72
2500	85	89	88	88	85	82	80	79	76	75	73	77	78	74	73	72	66	
3150	85	89	88	87	85	82	79	78	76	75	74	73	74	73	72	71	65	
4000	83	92	90	90	83	83	83	82	80	80	78	78	78	77	74	74	68	
5000	84	87	86	84	84	79	78	76	73	73	72	73	75	75	73	70	69	50
6300	81	85	84	82	82	76	74	71	74	73	73	76	77	73	71	69	59	
8000	77	81	80	78	79	74	73	70<	68<	73	70<	73	72	69<	67<	66<	52<	
10000	74	77	75	74	74	70	69	65	66	71	68	69	70	67	65	64	52<	
OVERALL	93	103	102	100	97	93	92	90	88	87	87	88	88	88	88	87	78	
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE																		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (03)																	IDENTIFICATION:	
1/3 OCTAVE BAND) OMEGA 1.4	
DISTANCE = 75 METERS) TEST 75-002-037	
NOISE SOURCE/SUBJECT:) RUN 02	
F-111F AIRCRAFT) TEMP = 13 C	
TF30-P-100 ENGINE) BAR PRESS = .767 M HG	
FAR FIELD NOISE) REL HUMID = 80 %	
OPERATION:) METEOROLOGY:	
80% RPM) TEMP = 13 C	
BOTH ENGINES) BAR PRESS = .767 M HG	
FREE FLOW) REL HUMID = 80 %	
FREQ (HZ)																	ANGLE (DEGREES)	
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
25	74	74	73	71	73	75	74	76	76	76	77	81	85	90	91	92		
31.5	73	72	72	72	74	73	76	76	75	77	78	80	86	90	92	92		
40	75	74	75	74	76	78	78	80	79	79	80	83	86	89	95	96	94	
50	76	75	78	75	78	79	78	79	81	82	84	86	92	95	97	95		
63	75	78	79	80	80	78	80	82	83	83	84	86	93	95	101	97		
80	79	80	82	83	83	82	84	86	84	86	88	91	96	101	103	98		
100	81	82	85	87	87	86	86	87	89	90	91	93	99	103	107	103		
125	83	84	85	85	85	82	85	87	88	90	91	93	97	101	107	102		
160	85	86	86	85	84	83	86	87	89	91	92	94	97	99	104	104		
200	85	86	86	83	83	83	84	85	87	87	89	90	92	95	98	99	100	
250	85	85	85	85	83	84	86	87	88	86	86	86	89	92	96	94	95	
315	83	85	85	84	83	83	83	82	83	80	82	84	87	90	92	94	93	
400	83	84	85	85	80	80	79	79	80	78	79	82	83	87	89	90	88	
500	83	82	84	83	78	79	79	80	79	78	82	82	86	87	88	87		
630	83	82	84	83	80	80	80	81	80	79	83	82	86	85	86	84		
800	82	81	84	83	79	80	79	80	80	79	79	82	81	84	84	85	82	
1000	84	84	86	83	82	81	80	81	80	79	79	81	80	83	82	82	79	
1250	83	89	89	87	85	83	83	83	80	79	79	80	79	82	81	81	77	
1600	92	91	91	90	88	87	86	84	82	79	79	80	79	81	80	80	77	
2000	92	90	91	91	91	95	84	84	81	80	81	80	81	80	80	76		
2500	99	97	97	97	94	92	90	90	86	83	82	82	80	81	80	81	79	
3150	103	101	101	100	99	97	95	95	92	89	89	88	85	86	84	85	83	
4000	95	94	95	93	93	91	90	90	88	88	89	89	87	87	84	82	81	
5000	95	93	93	92	91	90	88	88	84	82	82	81	80	80	79	78	76	
6300	95	93	93	92	91	89	88	88	85	84	82	82	80	80	79	78	77	
8000	90	88	88	87	87	84	83	84	80	81	81	81	79	79	77	76	75	
10000	86	86	85	84	83	81	80	80	76	79	79	77	75	76	74	73	72	
OVERALL	106	105	105	104	103	101	100	100	99	98	99	100	102	106	109	112	110	
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																		

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
5																
NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:																
(F-111F AIRCRAFT)) TEMP = 13 C))																
(TF30-P-100 ENGINE)) BAR PRESS = .767 M HG))																
(FAR FIELD NOISE)) REL HUMID = 80 %))																
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TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																	IDENTIFICATION:	
1/3 OCTAVE BAND																		
DISTANCE = 75 METERS																	OMEGA 1.4	
5																	TEST 75-002-037	
NOISE SOURCE/SUBJECT:																	RUN 04	
(
(F-111F AIRCRAFT																	13 C	
(TF30-P-100 ENGINE																	BAR PRESS = .767 M HG	
(FAR FIELD NOISE																	REL HUMID = 80 %	
(PAGE 2	
FREQ																		
(HZ)																		
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
73 74 73 73 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000																		
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OVERALL																		
104 104 104 103 103 101 101 100 100 99 101 102 106 109 113 117 121 117																		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

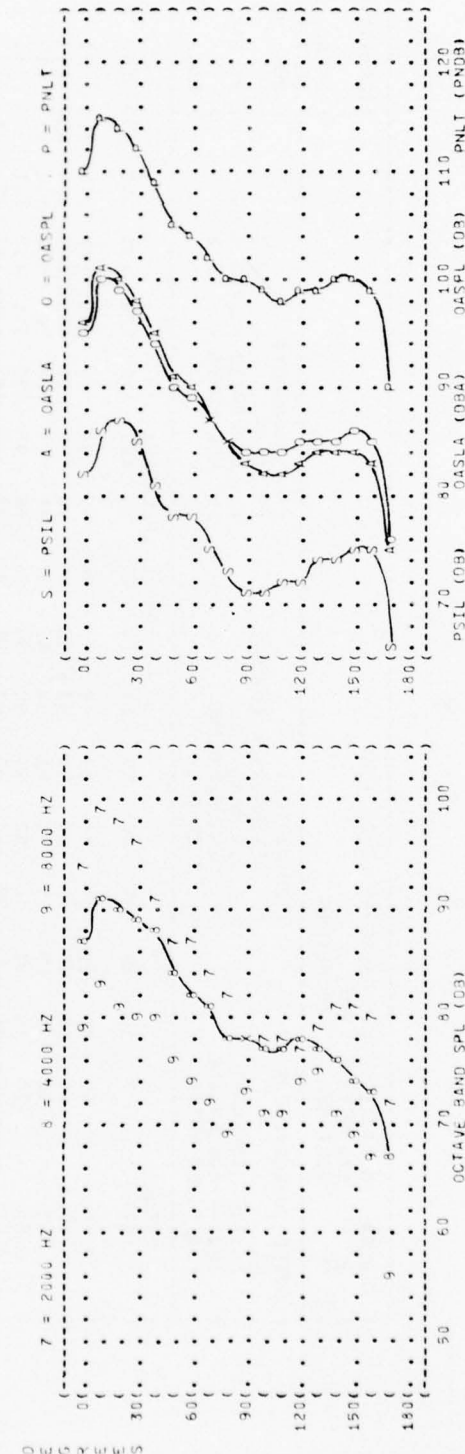
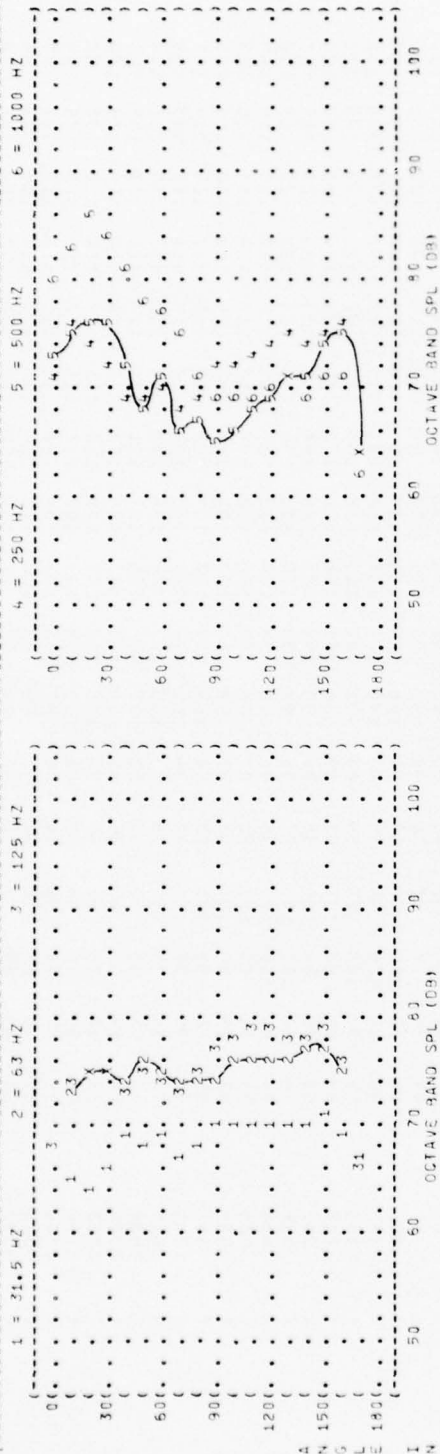
TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																				IDENTIFICATION:	
1/3 OCTAVE BAND) OMEGA 1.4	
DISTANCE = 75 METERS) TEST 75-002-037	
NOISE SOURCE/SUBJECT:) RUN 05	
(OPERATION:) METEOROLOGY:	
(MILITARY POWER) TEMP = 13 C	
(94.8% RPM) BAR PRESS = .767 M HG	
(SINGLE ENGINE) REL HUMID = 80 %	
(FREE FLOW) PAGE 2	
F-111F AIRCRAFT) 08 MAY 75	
TF30-P-100 ENGINE																					
FAR FIELD NOISE																					
FREQ																					
(HZ)																					
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																					
25 76 76 78 77 79 80 80 81 85 84 85 87 92 95 102 104 103																					
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OVERALL 104 104 107 105 104 104 104 105 107 109 111 114 119 125 129 131 128																					
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																					

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																	IDENTIFICATION:
1/3 OCTAVE BAND																	
DISTANCE = 75 METERS																	OMEGA 1.4
NOISE SOURCE/SUBJECT:																	TEST 75-002-037
(OPERATION:)																	RUN 06
(AFTERBURNER POWER)																	
(95% RPM)																	TEMP = 13 C
(SINGLE ENGINE)																	BAR PRESS = .767 M HG
(FREE FLOW)																	REL HUMID = 80 %
FREQ (HZ)																	PAGE 2
ANGLE (DEGREES)																	
0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170 180
89	87	90	89	89	89	90	91	94	94	96	101	101	107	112	114	114	111
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85	83	85	88	90	90	94	97	97	100	102	108	110	112	109	103	92	
82	79	81	85	86	86	90	94	94	97	100	107	110	112	109	103	90	
78	76	78	82	83	83	87	92	92	95	98	107	110	114	109	104	88	
OVERALL	107	109	111	111	111	113	114	116	118	120	125	129	134	135	132	129	

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

((FIGURE: NORMALIZED FARFIELD NOISE LEVELS
 ((3 DISTANCE = 100 METERS
 ((NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (IDENTIFICATION:)
 ((F-111F AIRCRAFT (IDLE POWER () OMEGA 1.4
 ((TF30-P-100 ENGINE (15% RPM () TEST 75-002-037
 ((FAR FIELD NOISE (BOTH ENGINES () RUN 01
 (() FREE FLOW () 08 MAY 75
 (() () REL HUMID = 70 %
 (() () PAGE 6



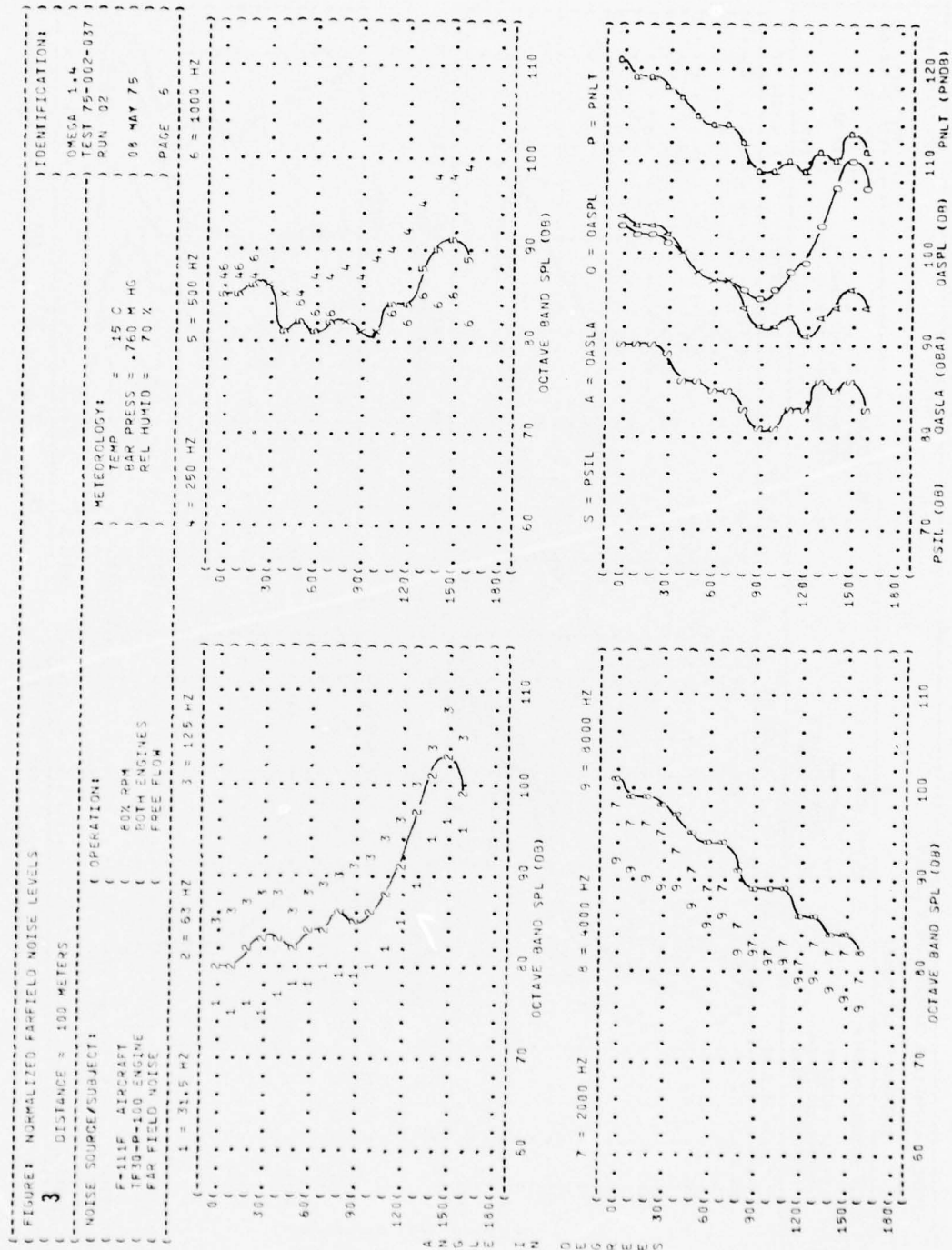


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

OPERATIONS:

F-111F AIRCRAFT 85% RPM

YF10-P-100 ENGINE BOTH ENGINES

FAR FIELD NOISE FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037

RUN 03

08 MAY 75

PAGE 6

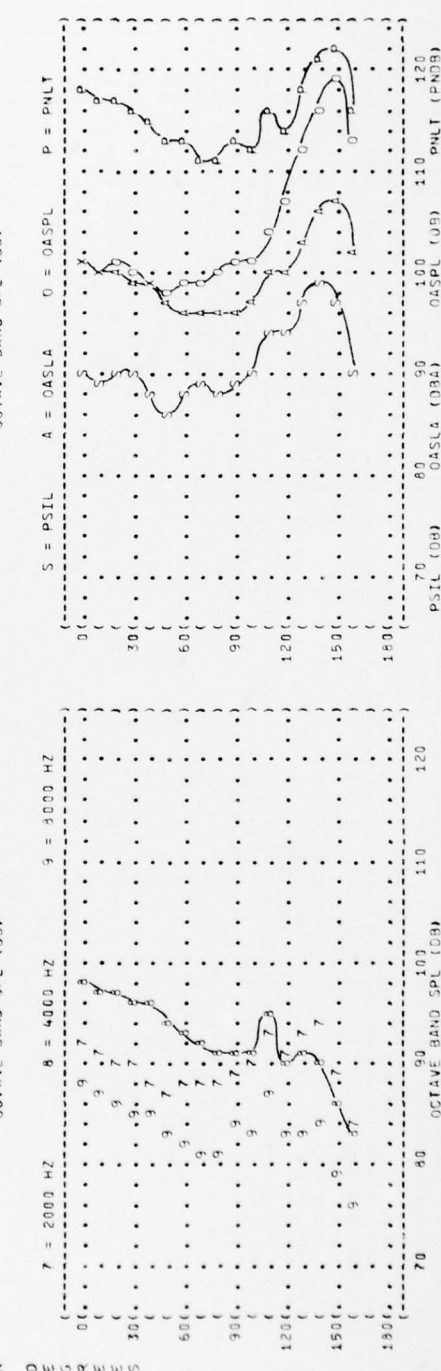
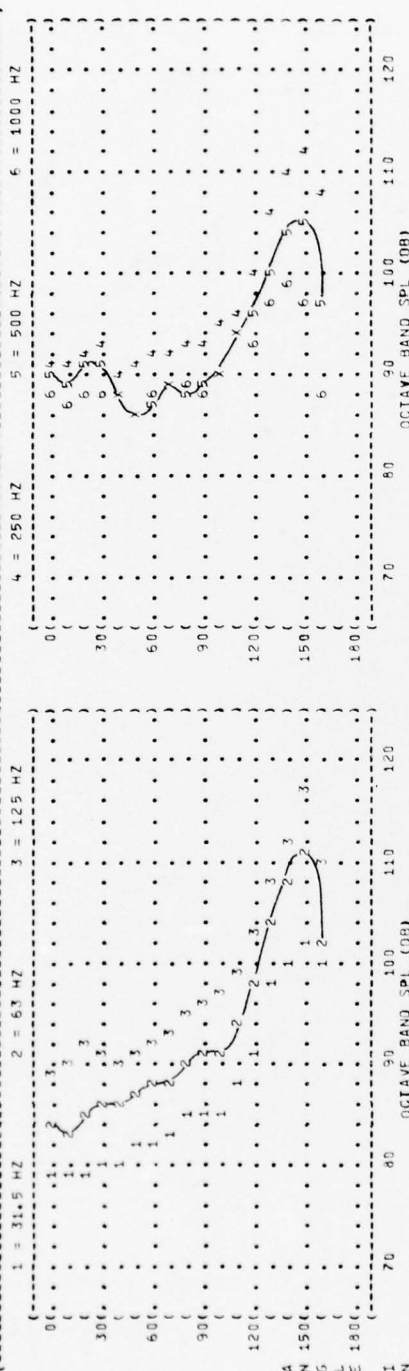


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

OPERATION:

F-111F AIRCRAFT

85% RPM

730-P-100 ENGINE

SINGLE ENGINE

FAR FIELD NOISE

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037

RUN 04

08 MAY 75

PAGE 5

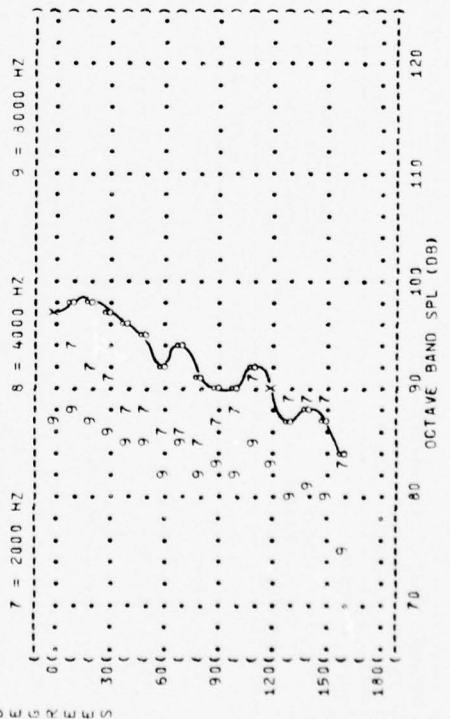
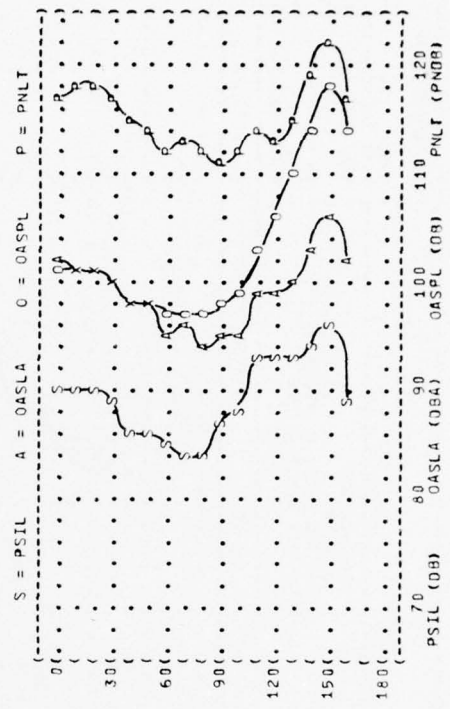
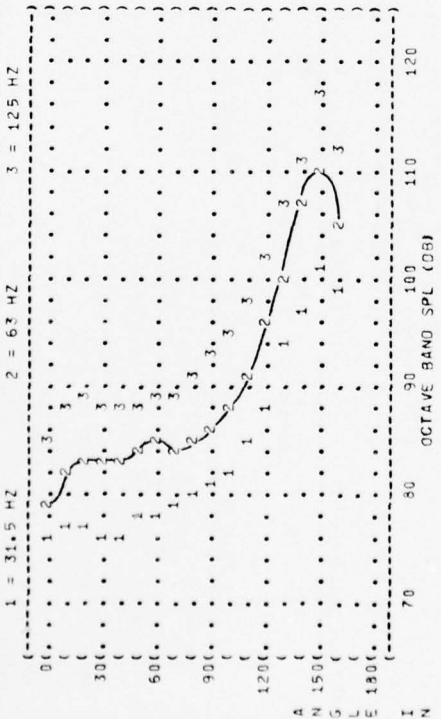
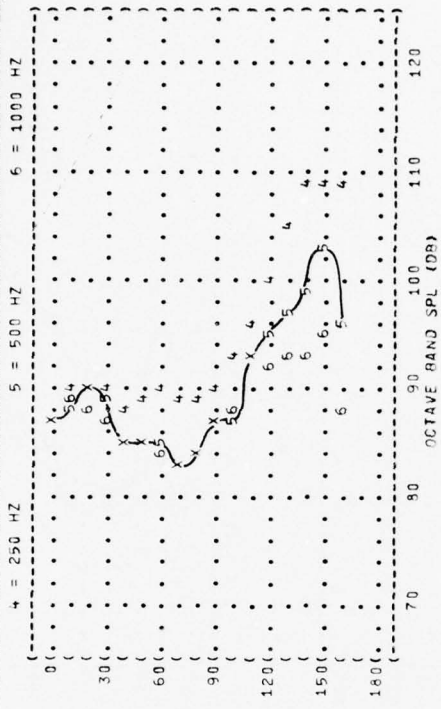


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037

RUN 05

08 MAY 75

PAGE 5

NOISE SOURCE/SUBJECT:

F-111F AIRCRAFT

TF30-P-100 ENGINE

FAR FIELD NOISE

OPERATION:

MILITARY POWER

94.82 RPM

SINGLE ENGINE

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

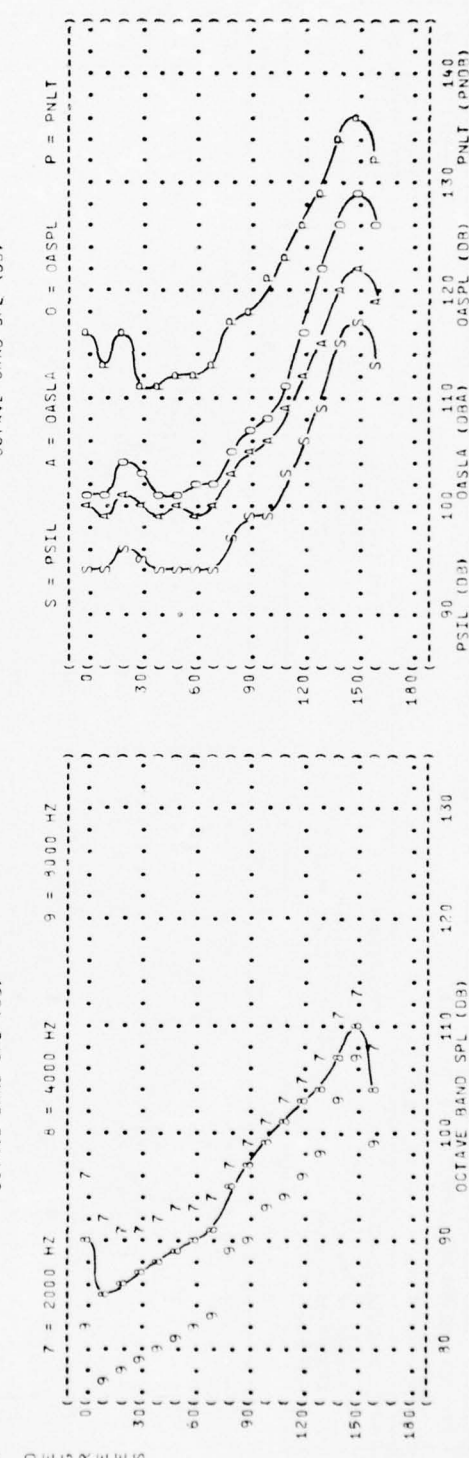
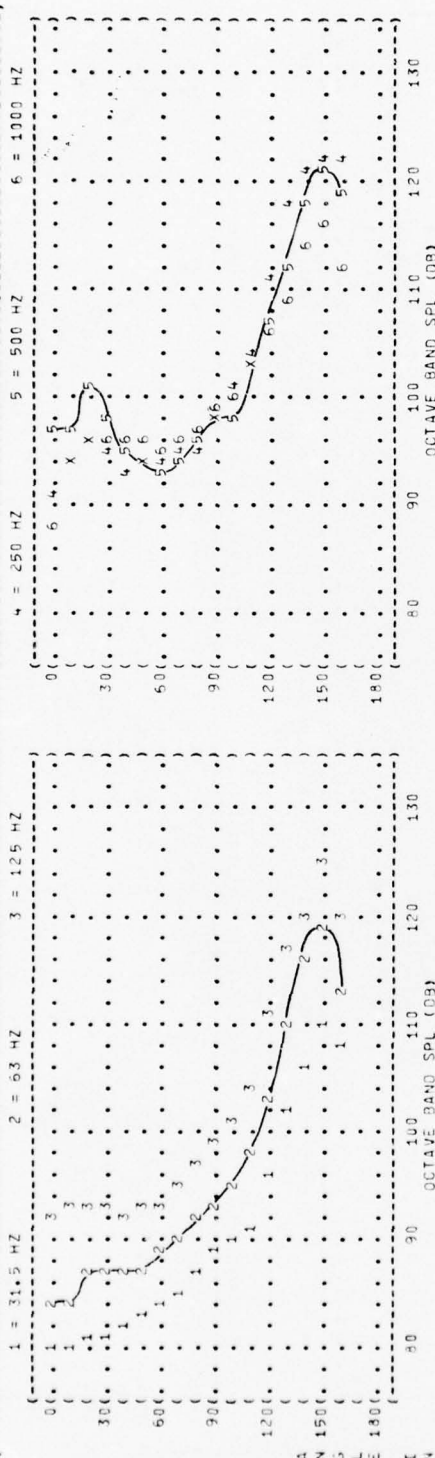


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT

OPERATION

AFTERBURNER POWER

F-111F AIRCRAFT

95% RPM

TF30-P-100 ENGINE

SINGLE ENGINE

FAR FIELD NOISE

FREE FLOW

METEOROLOGICAL

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

PAGE 5

IDENTIFICATION

OMEGA 1.4

TEST 75-002-037

RUN 06

08 MAY 75

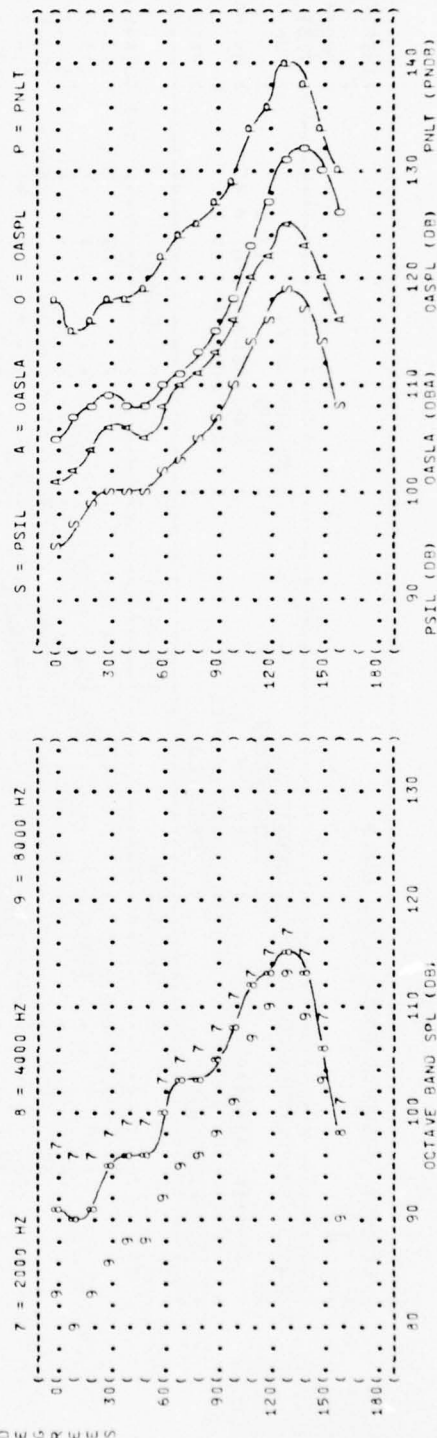
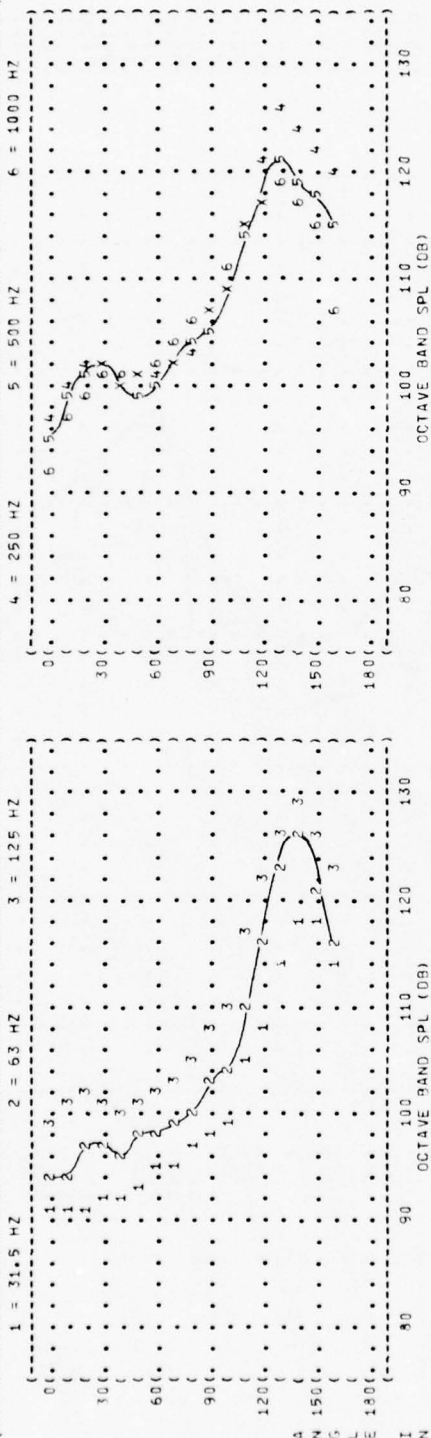


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037

RUN 01

08 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION:

TEMP = 13 C

BAR PRESS = .767 M HG

REL HUMID = 80 %

FREE FLOW

3 = 1/3 OCTAVE

1 = OCTAVE

0 = OVERALL

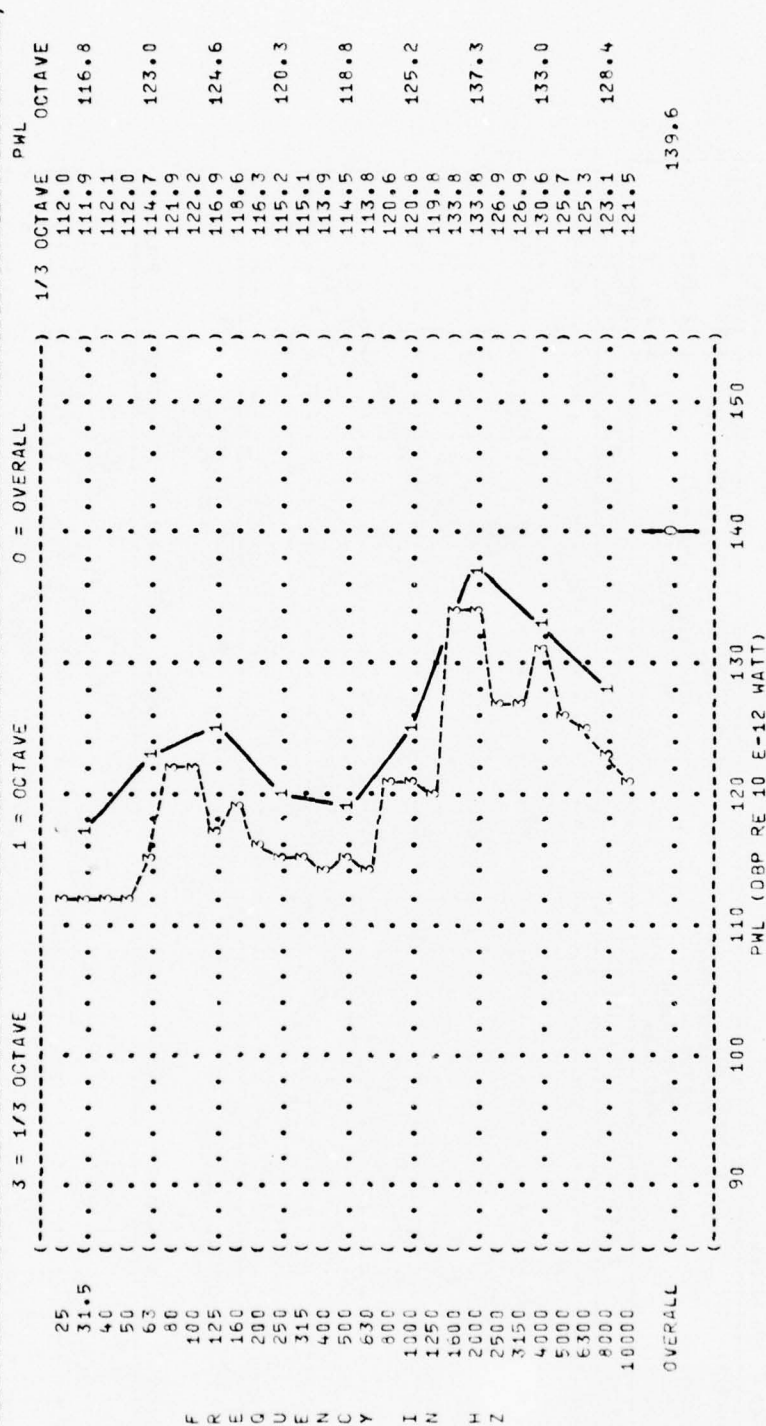


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037

RUN 02

08 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION:

80% RPM

BOTH ENGINES

FREE FLOW

METEOROLOGY:

TEMP = 13 C

BAR PRESS = .767 M HG

REL HUMID = 80 %

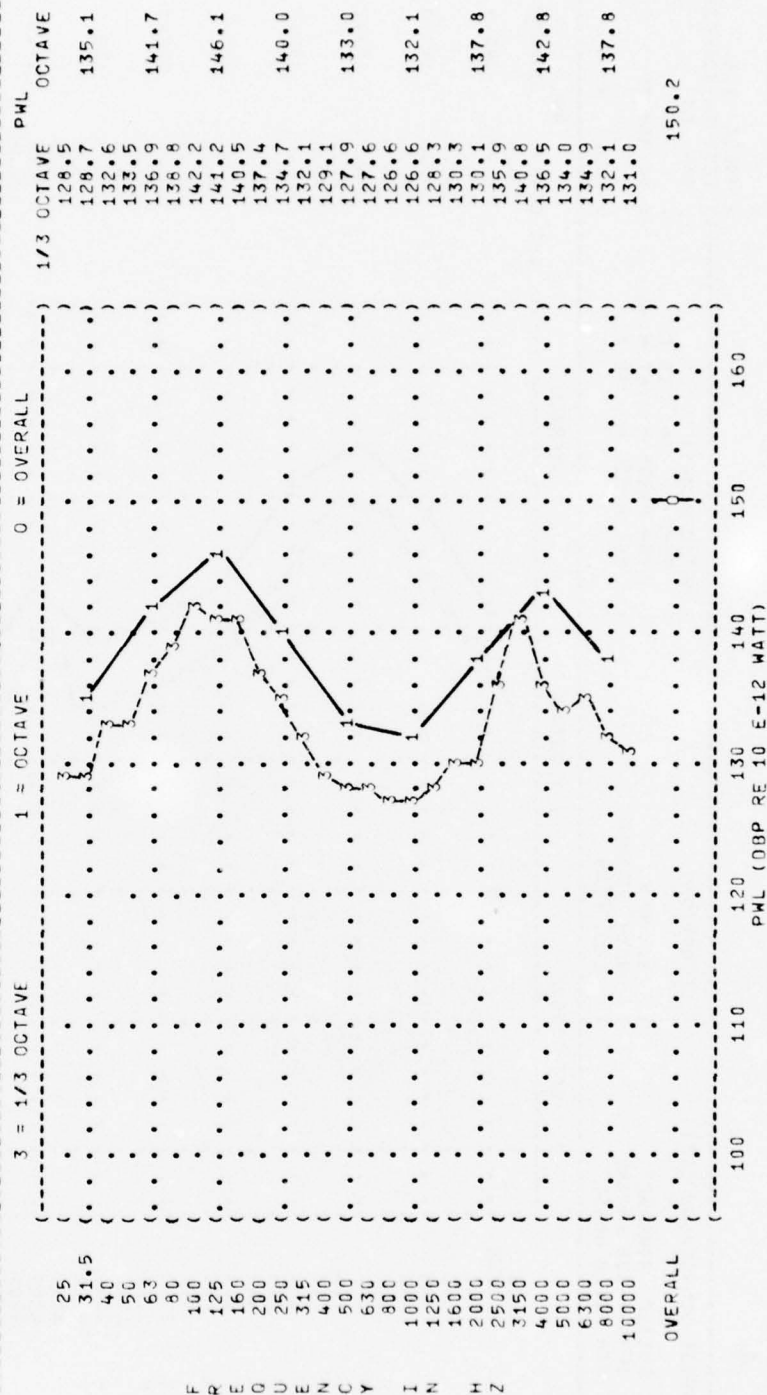


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037

RUN 03

08 MAY 75

PAGE 2

NOISE SOURCE/SUBJECT:

OPERATION:

85% RPM

90TH ENGINES

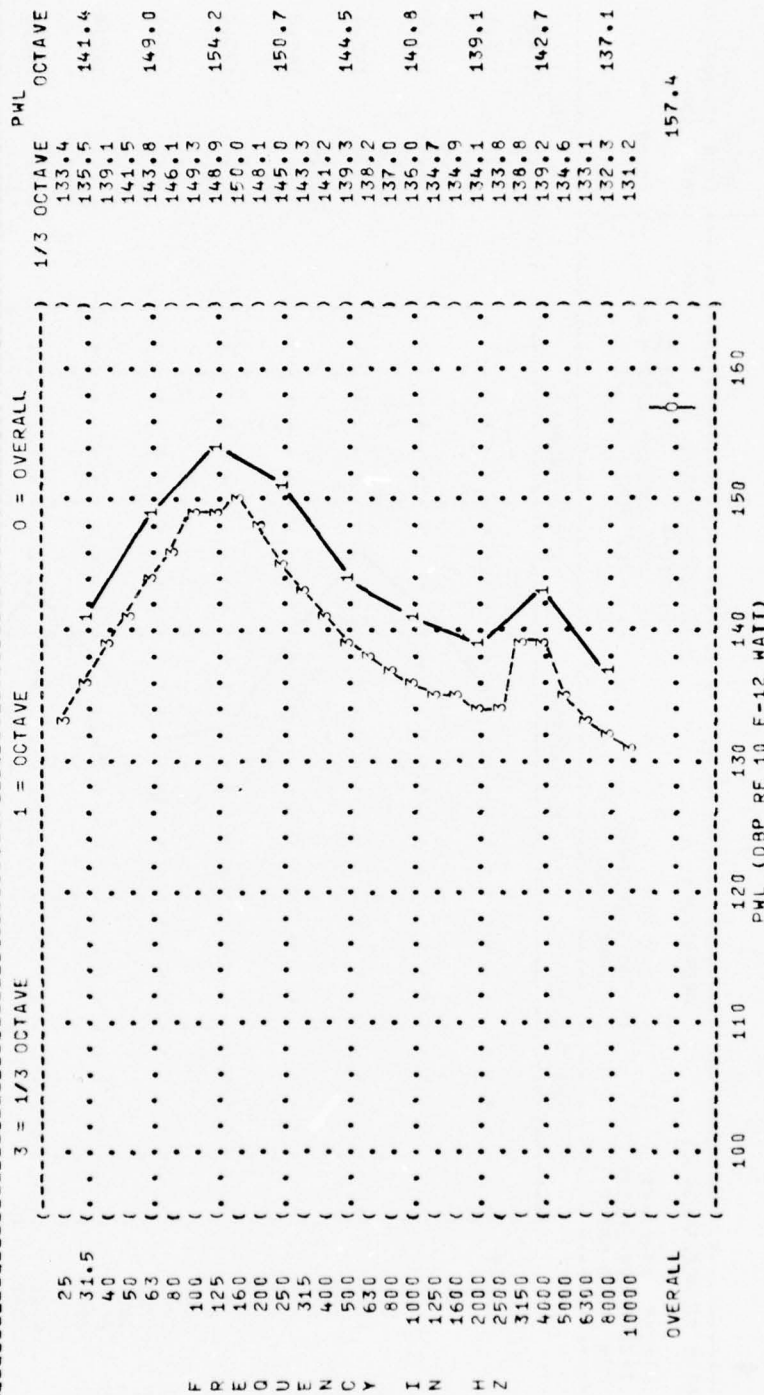
FREE FLOW

METEOROLOGY:

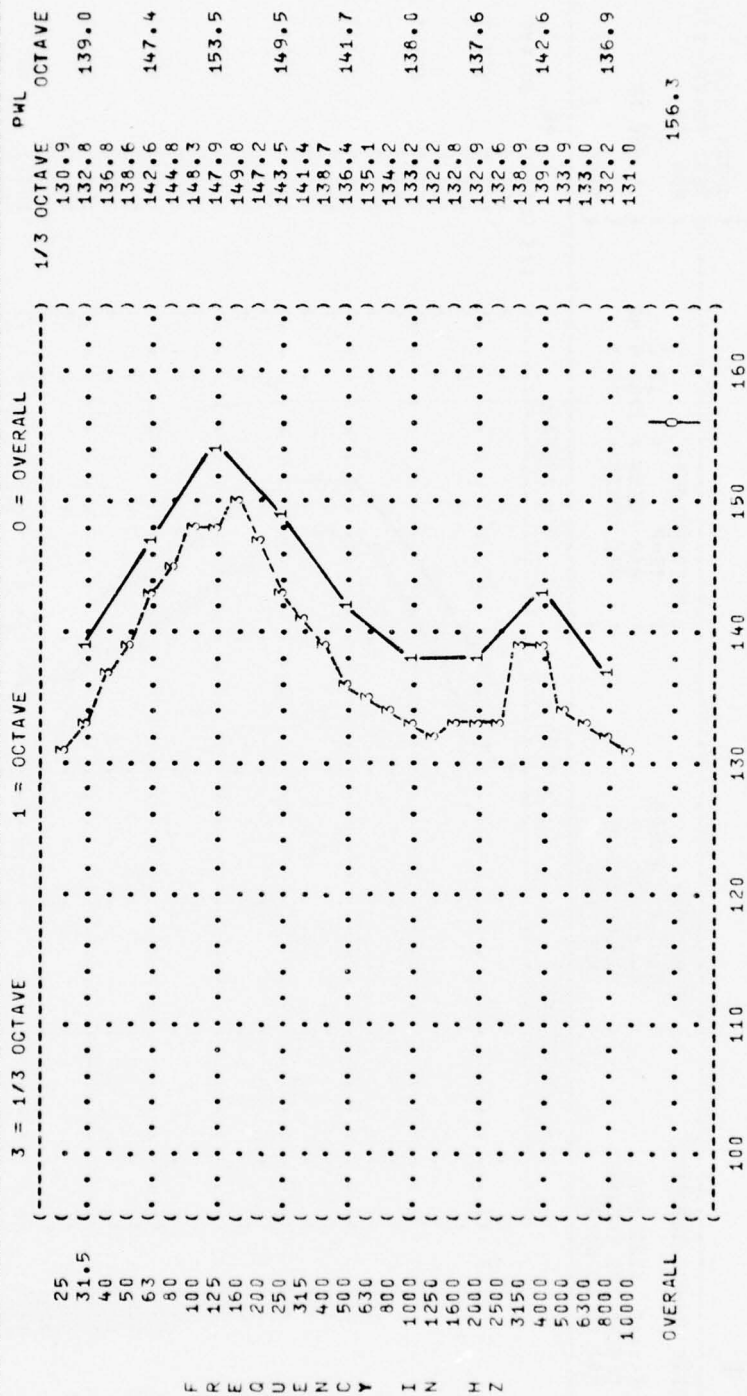
TEMP = 13 C

BAR PRESS = .767 M HG

REL HUMID = 80 %



(---) FIGURE: ACOUSTIC POWER LEVEL {PWL}
 () 4
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-037
 () RUN 04
 () 08 MAY 75
 () PAGE 3
 (---) NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 () F-111F AIRCRAFT (85% RPM) TEMP = 13 C
 () TF30-P-100 ENGINE (SINGLE ENGINE) BAR PRESS = .767 M HG
 () FAR FIELD NOISE (FREE FLOW) REL HUMID = 80 %
 (---)



((FIGURE: ACOUSTIC POWER LEVEL (PWL)))
 ((4))
 ((NOISE SOURCE/SUBJECT:))
 ((F-111F AIRCRAFT))
 ((TF30-P-100 ENGINE))
 ((FAR FIELD NOISE))
 ((OPERATION:))
 ((MILITARY POWER))
 ((94.8% RPM))
 ((SINGLE ENGINE))
 ((FREE FLOW))
 ((METEOROLOGY:))
 ((TEMP = 13 C))
 ((BAR PRESS = .767 M HG))
 ((REL HUMID = 80 %))
 ((IDENTIFICATION:))
 ((OMEGA 1.4))
 ((TEST 75-002-037))
 ((RUN 05))
 ((08 MAY 75))
 ((PAGE 3))

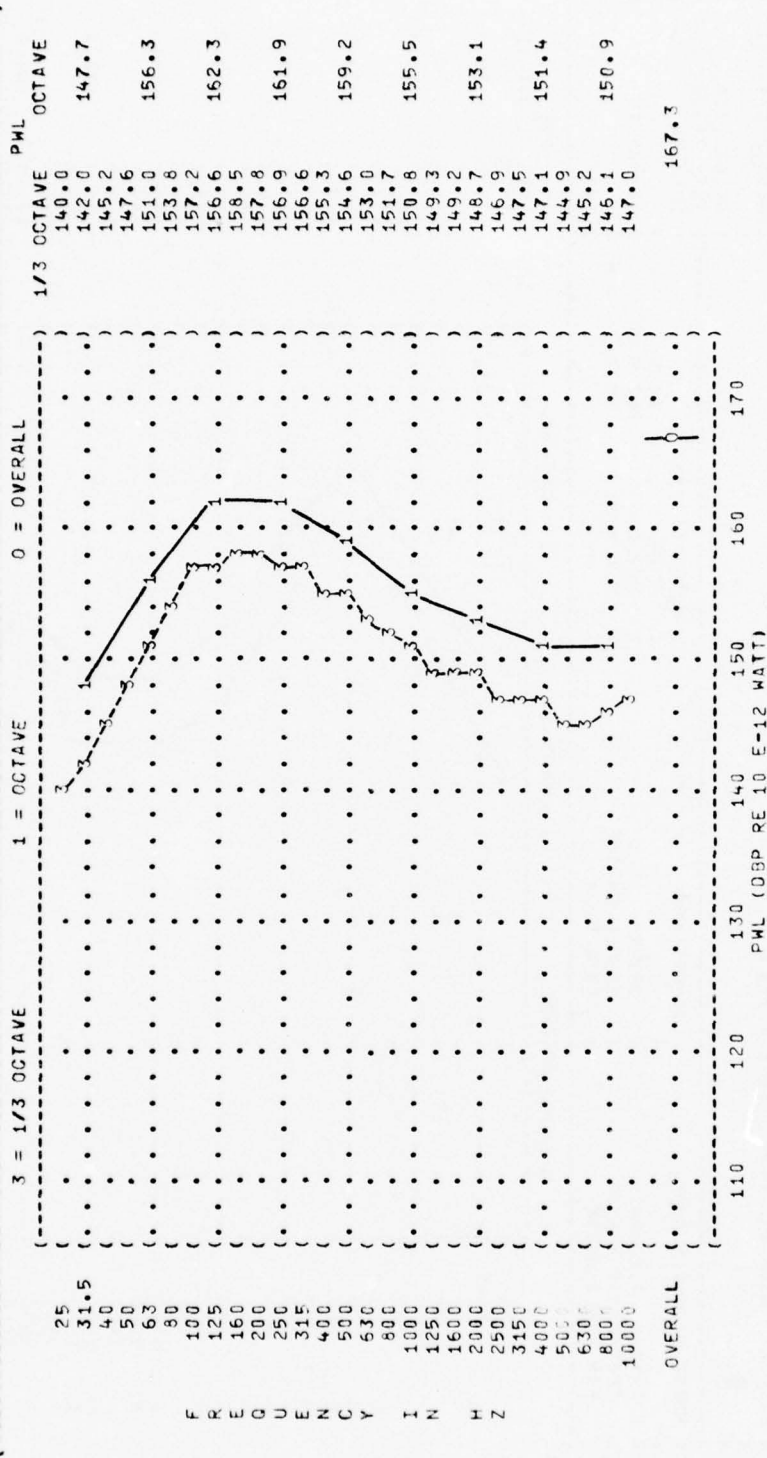


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037

RUN 06

08 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION:

AFTERBURNER POWER

95% RPM

SINGLE ENGINE

FREE FLOW

METEOROLOGY:

TEMP = 13 C

BAR PRESS = .767 M HG

REL HUMID = 80 %

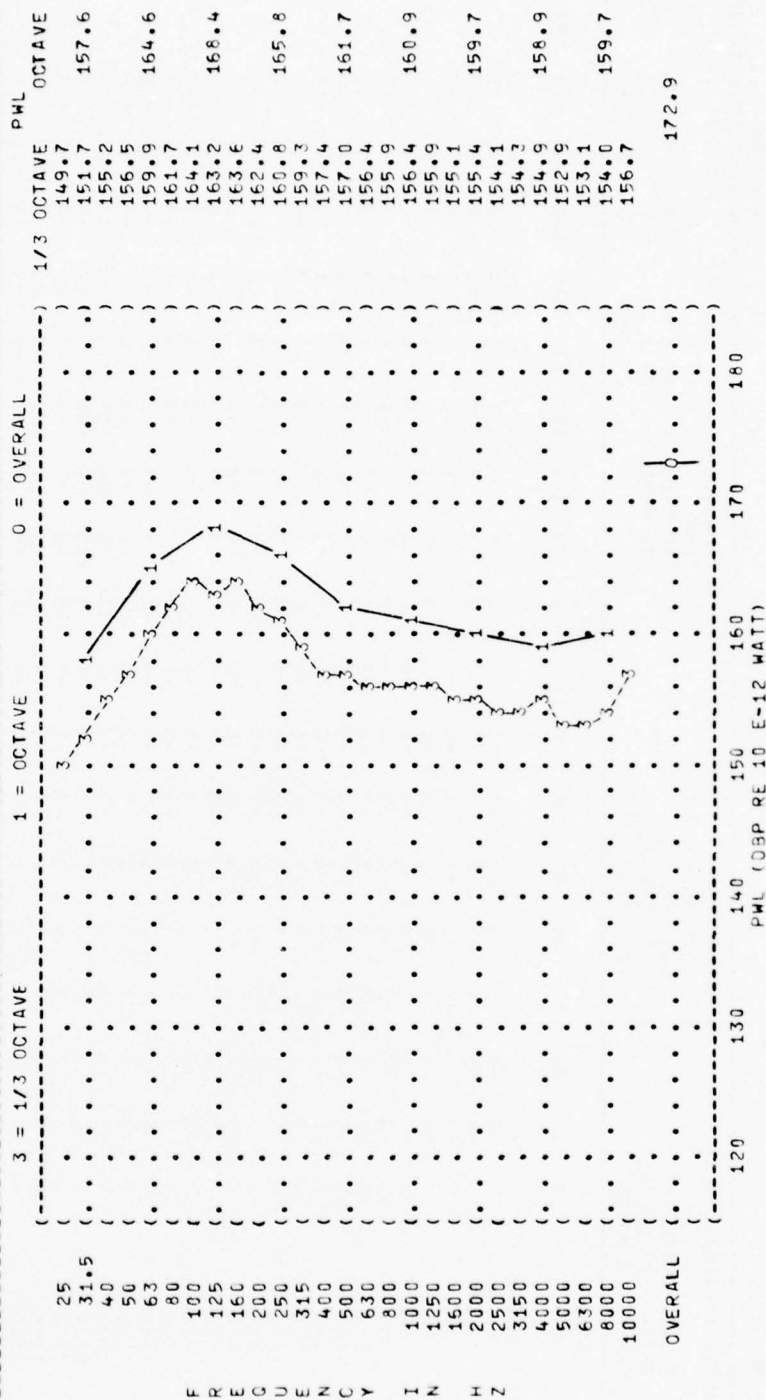


TABLE: DIRECTIVITY INDEX (DB)																			
IDENTIFICATION:																			
6																			
NOISE SOURCE/SUBJECT:																			
F-111F AIRCRAFT																			
TF30-P-100 ENGINE																			
FAR FIELD NOISE																			
METEOROLOGY:																			
TEMP = 13 C																			
BAR PRESS = .767 MHG																			
REL HUMID = 80 %																			
PAGE 4																			
ANGLE (DEGREES)																			
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-5	-2	-5	-1	0	-1	-0	-3	-2	1	1	0	1	1	1	2	1	1	-1
31.5	-4	-5	-3	-3	-0	0	-1	-1	-2	0	0	0	0	0	-1	-1	-1	-1	-3
40	-3	-3	-3	-3	-1	-1	0	-1	-1	0	-1	1	1	-0	1	2	1	0	-3
50	-0	1	1	1	-1	-1	-0	-1	-1	1	1	0	0	0	1	1	1	-0	-1
63	-1	0	0	1	-1	-1	-0	-1	-1	-2	0	-1	1	0	1	2	-1	-1	-13
80	-3	-1	-1	-1	-1	0	-2	-3	-3	0	1	1	1	1	2	2	-1	-1	-11
100	-3	-1	-1	-2	-2	0	-4	-5	-4	1	2	3	1	0	0	2	-0	-0	-10
125	-9	-2	-2	-4	-8	-3	-4	-3	-1	0	1	5	2	2	1	1	0	-11	-10
160	-8	2	1	-4	-6	-5	-3	-5	-3	0	1	2	3	3	2	-0	3	-10	-10
200	-0	4	1	-1	-2	-3	-2	-2	-2	-0	0	-3	-2	0	1	1	4	-9	-8
315	-1	5	2	1	-2	-3	-2	-5	-6	-7	-4	-2	-2	0	1	2	4	-7	-6
400	2	6	3	4	0	-3	0	-5	-6	-7	-5	-4	-2	-1	1	6	4	-4	-5
500	2	3	4	6	1	-2	0	-5	-6	-7	-4	-4	-3	-3	0	3	4	-6	-6
630	3	4	7	6	2	-2	0	-4	-4	-6	-5	-4	-3	-3	-1	0	2	-8	-8
800	3	6	10	7	3	0	-1	-3	-6	-8	-7	-8	-8	-5	-7	-5	2	-4	-13
1000	4	6	9	7	4	1	0	-1	-6	-9	-8	-8	-6	-6	-8	-6	-6	-15	-15
1250	5	11	10	7	2	-3	-2	-5	-7	-13	-15	-14	-16	-13	-9	-10	-11	-16	-16
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2000	4	8	7	7	4	2	-1	-2	-5	-6	-6	-7	-4	-3	-7	-8	-9	-15	-15
2500	4	8	7	6	6	1	-1	-2	-4	-6	-6	-6	-7	-5	-7	-9	-10	-16	-16
3150	4	8	7	6	6	1	-1	-2	-4	-5	-6	-6	-7	-5	-7	-9	-10	-16	-16
4000	5	9	7	6	5	1	-1	-2	-6	-8	-8	-6	-6	-3	-6	-8	-9	-19	-19
5000	4	8	6	5	5	1	-1	-3	-6	-8	-8	-6	-6	-3	-6	-8	-9	-18	-18
6300	4	7	6	5	5	1	-1	-3	-6	-8	-8	-6	-6	-3	-6	-8	-9	-18	-18
8000	4	7	6	5	5	1	-1	-3	-6	-8	-8	-6	-6	-3	-6	-8	-9	-18	-18
10000	4	7	5	4	4	0	-1	-4	-7	-10	-10	-10	-10	-10	-10	-10	-10	-20	-20
OCTAVE																			
31.5	-4	-5	-3	-3	-0	-1	-0	-2	-1	1	1	1	1	1	1	2	0	-2	-2
63	-2	-0	-0	-1	-1	-1	-3	-1	-1	-1	0	0	0	0	0	0	-1	-1	-11
125	-3	-1	-2	-2	-4	-1	-3	-3	-2	1	1	1	1	1	1	2	0	-8	-8
250	-2	4	1	-1	-4	-3	-2	-5	-4	-6	-6	-6	-6	-6	-6	-6	-6	-7	-7
500	-2	5	5	6	1	-3	0	-5	-4	-8	-8	-8	-8	-8	-8	-8	-6	-14	-14
1000	4	6	9	7	4	1	0	-2	-6	-10	-10	-10	-10	-10	-10	-10	-9	-17	-17
2000	5	10	10	8	3	-1	-1	-4	-7	-11	-11	-11	-11	-11	-11	-11	-9	-17	-17
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8000	4	7	6	5	5	1	-1	-3	-6	-8	-8	-6	-6	-5	-7	-9	-10	-16	-16
OVERALL	4	9	9	7	3	-0	-1	-3	-5	-6	-6	-6	-5	-5	-5	-5	-6	-6	-15

TABLE: DIRECTIVITY INDEX (DB)																		
6																		
NOISE SOURCE/SUBJECT:																		
(F-111F AIRCRAFT																		
(TF30-P-100 ENGINE																		
(FAR FIELD NOISE																		
(OPERATION:																		
(80% RPM																		
(BOTH ENGINES																		
(FREE FLOW																		
METEOROLOGY:																		
(TEMP = 13 C																		
(BAR PRESS = .767 M HG																		
(REL HUMID = 80 %																		
IDENTIFICATION:																		
(OMEGA 1.4																		
(TEST 75-002-037																		
(RUN 02																		
(OR MAY 75																		
(PAGE 4																		
FREQ																		
(HZ)																		
ANGLE (DEGREES)																		
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
1/3 OCTAVE																		
25																		
31.5																		
40																		
50																		
63																		
80																		
100																		
125																		
150																		
200																		
250																		
315																		
400																		
500																		
630																		
800																		
1000																		
1250																		
1600																		
2000																		
2500																		
3150																		
4000																		
5000																		
6300																		
8000																		
10000																		
OCTAVE																		
31.5																		
63																		
125																		
250																		
500																		
1000																		
2000																		
4000																		
8000																		
OVERALL																		

TABLE: DIRECTIVITY INDEX (DB)										IDENTIFICATION:									
6										OMEGA 1.4									
										TEST 75-002-037									
NOISE SOURCE/SUBJECT:										RUN 04									
(OPERATION:										METEOROLOGY:									
(85% RPM										TEMP = 13 C									
(SINGLE ENGINE										BAR PRESS = .767 M HG									
(FREE FLOW										REL HUMID = 80 %									
F-111F AIRCRAFT										08 MAY 75									
TF30-P-100 ENGINE										PAGE 4									
FAR FIELD NOISE																			
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
(HZ)																			
1/3 OCTAVE																			
25	-13	-13	-12	-13	-13	-12	-11	-10	-9	-8	-9	-6	-2	3	6	9	8		
31.5	-14	-13	-15	-15	-15	-12	-13	-12	-10	-10	-9	-8	-4	3	6	9	8		
40	-16	-16	-16	-16	-15	-13	-14	-13	-12	-11	-10	-6	-3	2	6	10	8		
50	-19	-19	-17	-16	-15	-13	-14	-12	-12	-11	-10	-7	-3	1	7	10	8		
63	-20	-18	-17	-17	-17	-16	-16	-16	-16	-13	-12	-9	-4	1	7	10	5		
80	-21	-18	-16	-17	-16	-16	-14	-16	-15	-14	-12	-9	-4	1	8	10	5		
100	-22	-19	-17	-17	-18	-17	-16	-17	-16	-14	-12	-8	-4	-0	1	11	4		
125	-20	-17	-17	-17	-17	-17	-17	-17	-15	-13	-11	-7	-4	1	4	11	6		
160	-20	-17	-16	-19	-20	-19	-18	-17	-15	-13	-11	-7	-3	2	3	11	7		
200	-16	-13	-16	-15	-17	-17	-16	-15	-14	-12	-9	-5	-2	3	9	4	8		
250	-13	-11	-10	-10	-11	-11	-8	-11	-10	-8	-8	-4	-0	3	6	4	4		
315	-12	-8	-7	-7	-11	-3	-8	-11	-10	-8	-7	-4	-0	3	5	10	2		
400	-8	-6	-5	-6	-9	-10	-9	-13	-12	-9	-6	-2	1	3	6	9	1		
500	-6	-5	-4	-4	-8	-3	-8	-11	-9	-6	-4	-0	2	3	5	10	2		
630	-5	-5	-2	-3	-7	-7	-7	-9	-7	-4	-5	-2	2	3	5	9	7		
800	-4	-4	-2	-4	-6	-6	-7	-7	-6	-2	-3	3	3	3	4	6	1		
1000	-3	-1	-1	-2	-5	-5	-5	-7	-6	-2	-2	3	3	3	4	5	1		
1250	-2	1	1	-2	-3	-3	-4	-5	-5	-2	-1	3	3	3	3	4	2		
1600	6	4	2	1	-1	-1	-3	-5	-5	-2	-1	3	2	2	1	2	1		
2000	11	5	2	1	-2	-1	-3	-3	-3	-1	-0	3	2	1	1	2	1		
2500	7	6	5	4	1	0	-2	-3	-3	-2	-0	2	1	-1	-1	-2	1		
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5000	3	4	4	3	2	2	-1	1	-2	-1	-2	-3	-1	-4	-4	-4	1		
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8000	2	3	3	2	1	1	-2	2	-1	-0	-1	2	0	-3	-2	-3	-8		
10000	2	3	3	2	1	0	-3	2	-1	0	-1	2	0	-2	-2	-3	-8		
OCTAVE																			
31.5	-15	-14	-15	-15	-15	-13	-13	-12	-11	-10	-9	-6	-3	2	6	9	8		
63	-20	-17	-17	-17	-17	-16	-15	-16	-15	-13	-12	-8	-4	1	7	10	5		
125	-20	-17	-17	-18	-18	-16	-17	-17	-15	-13	-11	-7	-3	1	5	11	6		
250	-19	-12	-12	-11	-14	-13	-11	-13	-11	-8	-6	-1	3	3	8	7	2		
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1000	-3	-1	-1	-3	-4	-4	-6	-7	-5	-2	-2	3	3	5	5	-2	2		
2000	8	5	3	2	-1	-1	-3	-3	-4	-2	-1	3	1	1	3	0	-6		
4000	5	6	5	5	3	2	-1	1	-2	-3	-1	-1	-3	-5	-4	-5	-9		
8000	3	4	3	3	2	1	-1	2	-1	-1	-1	-1	-1	-3	-2	-4	-8		
OVERALL	-7	-7	-7	-8	-10	-10	-11	-11	-11	-10	-9	-5	-2	2	6	10	6		

TABLE: DIRECTIVITY INDEX (DB)																			
6																			
NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:)																			
(F-111F AIRCRAFT)) TEMP = 13 C)) OMEGA 1.4																			
(TF30-P-100 ENGINE)) BAR PRESS = .767 M HG)) TEST 75-002-037																			
(FAR FIELD NOISE)) REL HUMID = 80 %)) RUN 05																			
)) 08 MAY 75																			
)) PAGE 4																			
FREQ																			
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
ANGLE (DEGREES)																			
1/3 OCTAVE																			
(25	-19	-19	-17	-18	-16	-15	-15	-14	-10	-11	-10	-8	-3	0	7	9	8		
(31.5	-21	-20	-19	-19	-18	-18	-16	-16	-13	-12	-11	-10	-5	2	6	9	9		
(40	-19	-21	-19	-20	-18	-17	-16	-15	-14	-11	-10	-8	-4	2	7	10	7		
(50	-24	-24	-23	-21	-22	-21	-18	-19	-15	-14	-12	-10	-4	2	7	10	6		
(63	-25	-25	-22	-22	-22	-22	-20	-19	-16	-16	-13	-10	-5	1	8	10	4		
(80	-24	-24	-22	-22	-22	-21	-20	-19	-17	-16	-15	-11	-6	1	8	10	5		
(100	-26	-23	-23	-23	-24	-22	-21	-21	-18	-16	-14	-11	-6	1	8	10	5		
(125	-24	-21	-20	-20	-22	-22	-21	-19	-17	-15	-13	-10	-3	2	5	11	6		
(160	-21	-20	-20	-21	-22	-22	-21	-19	-17	-15	-13	-10	-2	4	11	11	6		
(200	-22	-20	-21	-21	-21	-22	-21	-20	-19	-15	-12	-9	-3	6	6	8	6		
(250	-24	-22	-19	-18	-21	-20	-19	-18	-19	-16	-12	-9	-3	3	9	6	9		
(315	-23	-19	-16	-18	-21	-19	-19	-20	-18	-17	-15	-11	-5	2	7	9	8		
(400	-20	-19	-16	-16	-19	-19	-20	-19	-18	-16	-14	-10	-5	1	6	11	8		
(500	-11	-12	-7	-12	-17	-17	-18	-17	-14	-13	-14	-10	-4	0	8	9	8		
(630	-17	-13	-11	-12	-14	-15	-17	-15	-13	-11	-11	-6	-2	0	7	10	7		
(800	-19	-13	-10	-11	-11	-13	-14	-14	-11	-9	-8	-5	-2	1	7	9	6		
(1000	-19	-14	-11	-11	-11	-11	-11	-11	-11	-8	-8	-4	-1	2	7	9	5		
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(1600	-12	-14	-13	-12	-11	-10	-10	-9	-8	-6	-5	-2	0	2	7	9	3		
(2000	-6	-11	-13	-14	-14	-13	-13	-12	-11	-9	-8	-4	0	2	6	8	4		
(2500	-13	-16	-15	-14	-14	-12	-11	-11	-6	-5	-3	-1	0	2	6	8	3		
(3150	-15	-17	-15	-15	-14	-12	-12	-10	-6	-5	-2	-0	1	2	6	8	3		
(4000	-9	-16	-15	-14	-13	-13	-11	-11	-6	-4	-2	-0	2	3	6	8	3		
(5000	-12	-17	-15	-14	-13	-12	-11	-10	-6	-4	-2	-1	1	2	5	9	2		
(6300	-13	-18	-17	-16	-15	-14	-13	-13	-7	-5	-2	-1	0	2	6	9	3		
(8000	-16	-21	-20	-19	-18	-17	-16	-15	-8	-7	-5	-3	-1	1	6	10	1		
(10000	-18	-23	-22	-21	-20	-19	-17	-17	-10	-9	-6	-5	-2	1	7	10	1		
OCTAVE																			
(31.5	-20	-20	-19	-19	-18	-17	-16	-15	-13	-11	-10	-9	-4	2	7	10	8		
(63	-25	-24	-22	-22	-22	-21	-19	-19	-16	-15	-14	-10	-5	1	8	10	5		
(125	-23	-21	-21	-21	-23	-22	-21	-20	-17	-15	-13	-10	-3	3	6	11	6		
(250	-23	-20	-18	-19	-21	-20	-20	-19	-19	-16	-13	-10	-3	4	7	8	8		
(500	-15	-14	-10	-13	-16	-17	-18	-17	-15	-13	-10	-6	-4	0	7	10	8		
(1000	-19	-14	-11	-11	-11	-12	-12	-12	-10	-8	-7	-4	-1	1	7	9	5		
(2000	-9	-13	-13	-13	-13	-11	-11	-10	-7	-6	-4	-1	0	2	7	8	3		
(4000	-12	-16	-15	-14	-13	-12	-11	-10	-6	-4	-2	-0	1	2	6	8	3		
(8000	-15	-20	-19	-18	-17	-16	-15	-14	-8	-7	-4	-2	-1	1	7	10	2		
OVERALL																			
(18	-18	-16	-15	-17	-18	-18	-17	-17	-14	-13	-11	-8	-3	3	7	10	7		

TABLE: DIRECTIVITY INDEX (DB)										IDENTIFICATION:									
6										OMEGA 1.4									
NOISE SOURCE/SUBJECT:										TEST 75-002-037									
(F-111F AIRCRAFT										RUN 06									
(TF30-P-100 ENGINE										06 MAY 75									
(FAR FIELD NOISE										PAGE 4									
FREQ										METEOROLOGY:									
(HZ)										TEMP = 13 C									
										BAR PRESS = .767 M HG									
										REL HUMID = 80 %									
										ANGLE (DEGREES)									
1/3 OCTAVE																			
25	-16	-17	-14	-16	-16	-14	-14	-11	-10	-8	-3	-4	3	7	9	6			
31.5	-19	-18	-18	-17	-16	-14	-13	-11	-10	-10	-4	-2	4	8	8	5			
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50	-21	-22	-21	-20	-19	-18	-18	-16	-15	-15	-6	-0	6	9	7	-0			
63	-23	-23	-21	-20	-19	-18	-18	-17	-15	-13	-8	-1	7	9	4	-1			
80	-24	-23	-19	-20	-21	-19	-17	-16	-14	-12	-6	-0	7	9	3	-0			
100	-25	-22	-20	-21	-21	-19	-18	-16	-14	-13	-5	-2	7	9	5	1			
125	-22	-19	-18	-19	-19	-18	-18	-15	-12	-10	-5	0	4	9	6	2			
160	-19	-17	-18	-19	-20	-17	-17	-15	-11	-10	-2	4	4	8	6	3			
200	-20	-18	-20	-18	-20	-17	-17	-15	-12	-10	-3	3	7	6	5	3			
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315	-20	-16	-13	-14	-17	-15	-15	-14	-11	-8	-3	2	8	6	4	4			
400	-18	-16	-12	-14	-14	-14	-13	-12	-9	-7	-1	3	7	6	4	3			
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2500	-19	-17	-16	-14	-13	-12	-8	-6	-5	-3	-1	3	4	6	4	-3			
3150	-20	-18	-17	-14	-13	-12	-8	-5	-4	-1	3	4	6	4	-3	-10			
4000	-16	-19	-18	-14	-14	-9	-6	-6	-4	-2	3	4	7	4	-3	-11			
5000	-19	-20	-18	-14	-13	-9	-6	-6	-4	-1	2	4	7	4	-2	-12			
6300	-20	-22	-20	-17	-15	-11	-8	-8	-5	-3	3	5	7	4	-2	-13			
8000	-23	-26	-24	-20	-19	-15	-11	-10	-8	-5	2	5	8	4	-2	-15			
10000	-27	-30	-27	-23	-22	-18	-13	-13	-10	-7	2	5	8	4	-2	-17			
OCTAVE																			
31.5	-19	-19	-18	-18	-17	-15	-14	-12	-12	-11	-5	-2	4	8	9	4			
63	-23	-23	-20	-20	-21	-19	-17	-17	-14	-13	-7	-1	6	9	4	-1			
125	-21	-19	-19	-19	-20	-19	-18	-15	-13	-11	-4	1	5	9	6	2			
250	-20	-18	-16	-16	-17	-17	-16	-15	-11	-9	-3	3	8	6	5	3			
500	-18	-15	-12	-11	-14	-15	-13	-10	-9	-5	0	3	7	5	4	1			
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2000	-14	-15	-15	-13	-12	-12	-8	-6	-5	-3	3	4	6	4	-2	-10			
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8000	-22	-25	-23	-19	-18	-14	-10	-10	-7	-4	2	5	8	4	-2	-15			
OVERALL																			
	-20	-18	-17	-16	-17	-15	-13	-12	-10	-7	-2	2	6	8	5	1			

FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
 5
 EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-037
 PUN 01
 08 MAY 75
 PAGE 13

NOISE SOURCE/SUBJECT:
 OPERATION:
 (IDLE POWER
 (65% RPM
 (BOTH ENGINES
 (FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

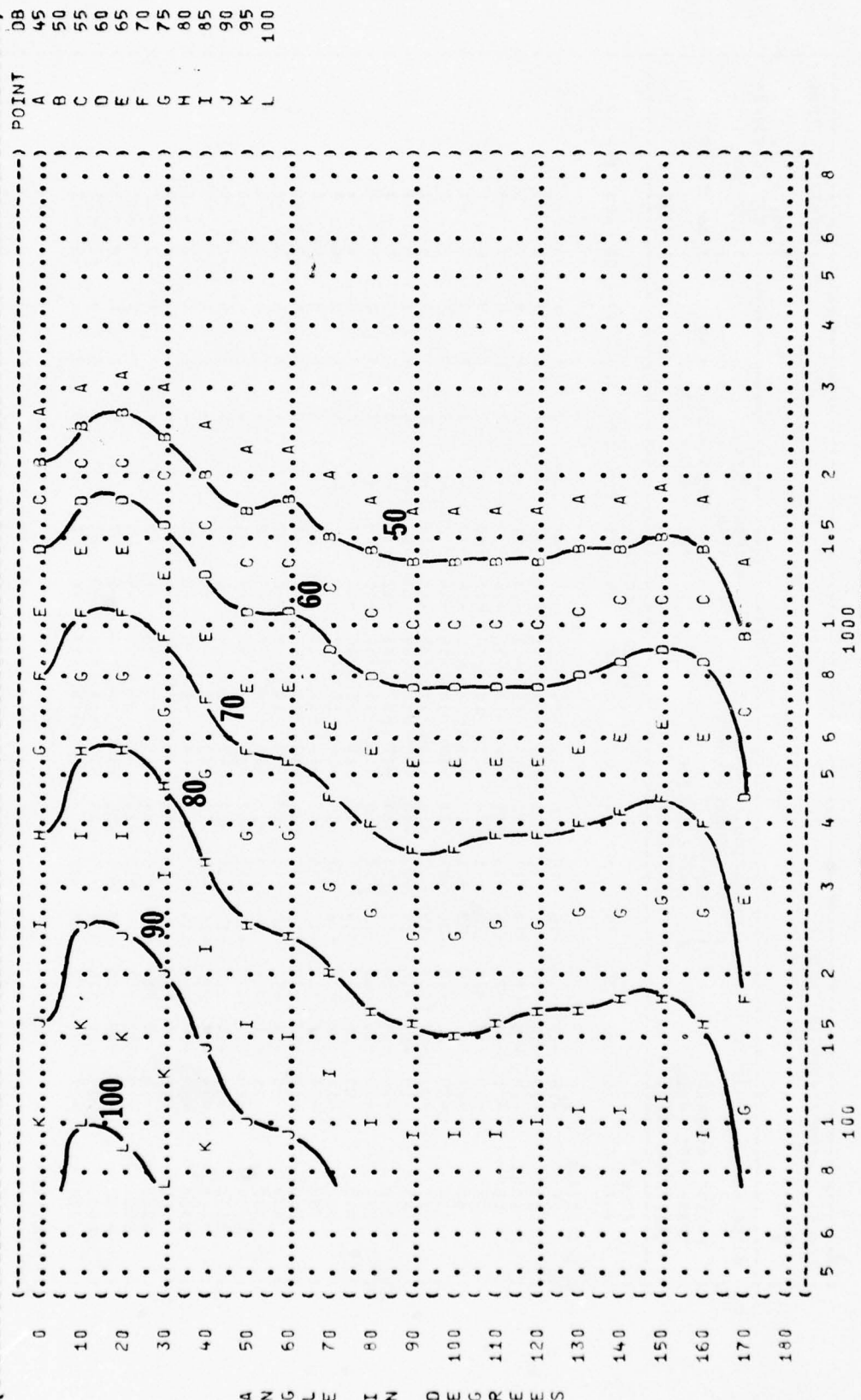


FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL}
EQUAL LEVEL CONTOURS (DB)
5

) IDENTIFICATION:
)
)
) OMEGA 1.4
) TEST 75-002-037
) RUN 02
)
) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 M HG
) REL HUMID = 70 %
)
) PAGE 13



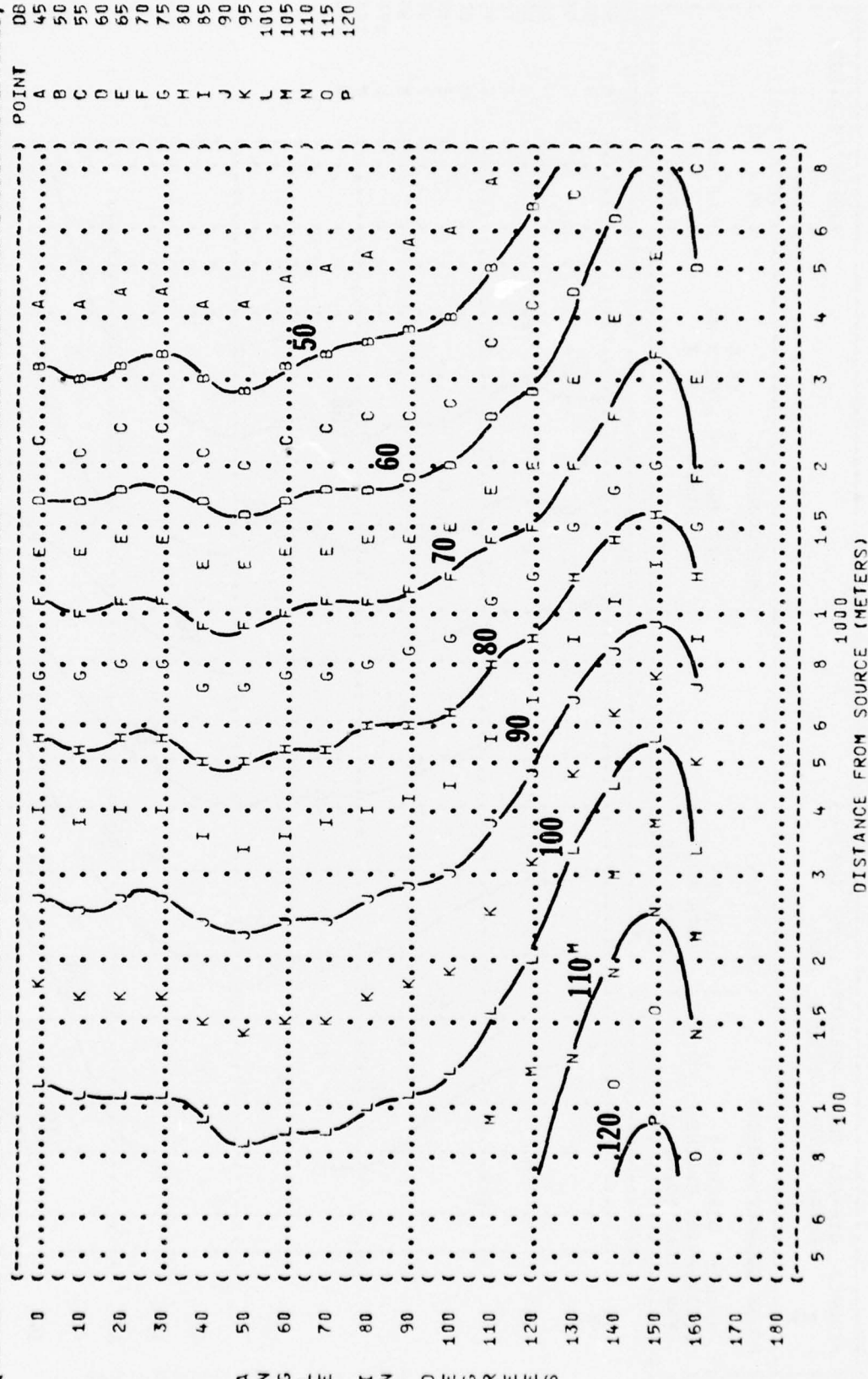
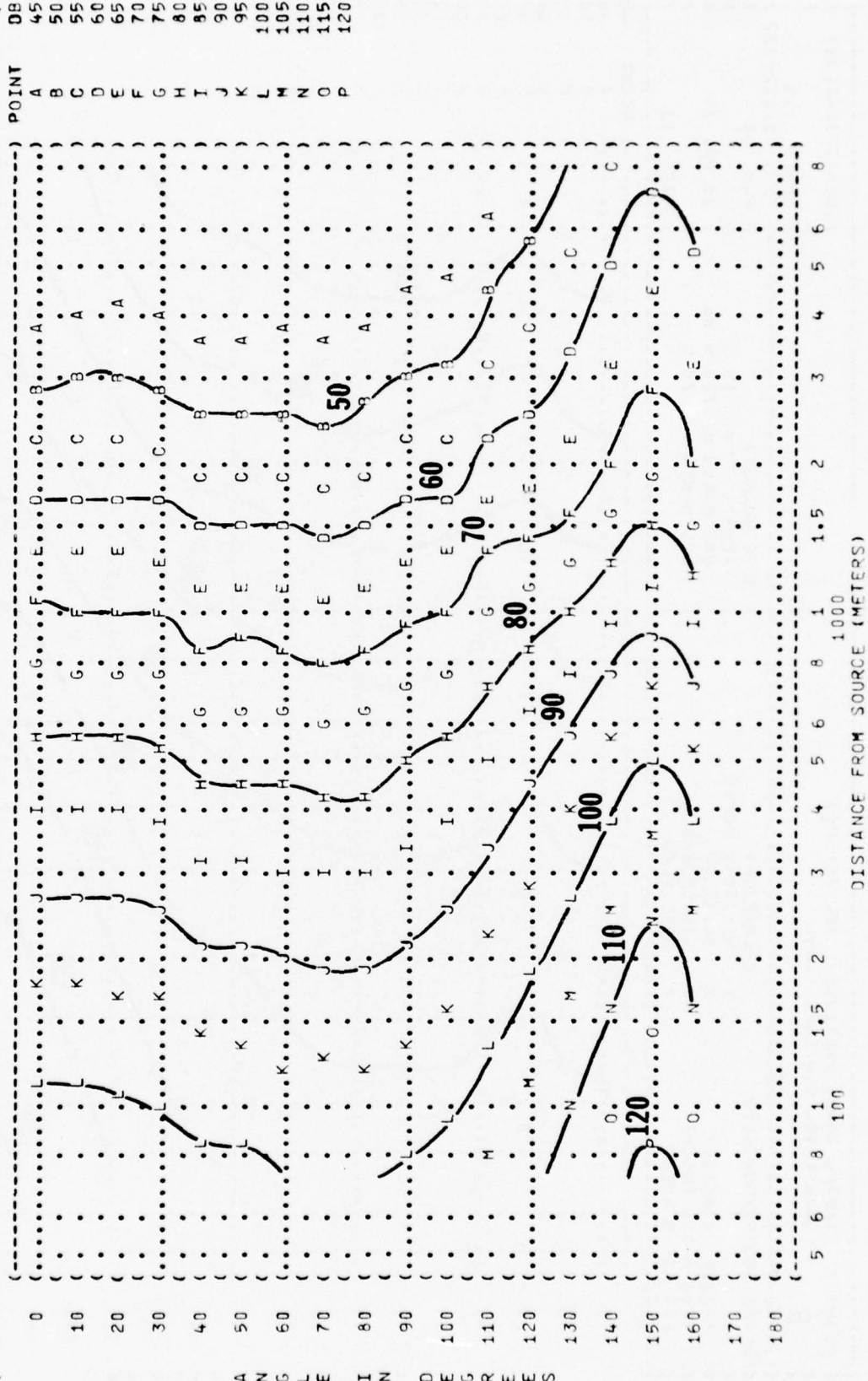
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FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
 5
 IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-037
 RUN 04
 NOISE SOURCE/SUBJECT: (OPERATION:)
 F-111F AIRCRAFT (85% RPM)
 TF30-P-100 ENGINE (SINGLE ENGINE)
 FAR FIELD NOISE (FREE FLOW)
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 08 MAY 75
 PAGE 13



A N G L E I N D E G R E E S

FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
 5
 EQUAL LEVEL CONTOURS (DB)

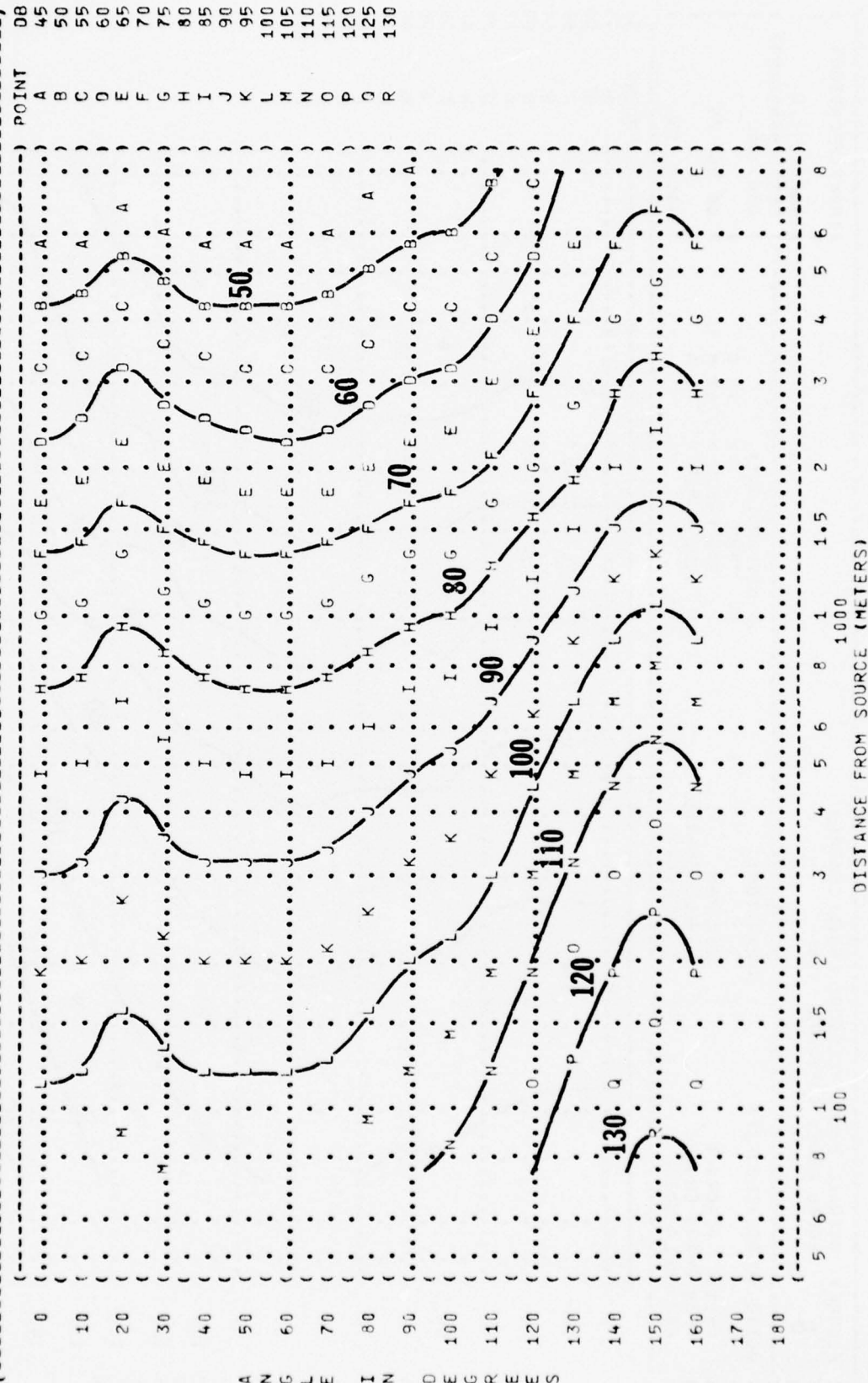
IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-037
 RUN 05

NOISE SOURCE/SUBJECT:
 F-111F AIRCRAFT
 TF30-P-100 ENGINE
 FAR FIELD NOISE

OPERATION:
 MILITARY POWER
 94.8% RPM
 SINGLE ENGINE
 FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

08 MAY 75
 PAGE 13



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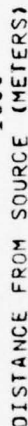
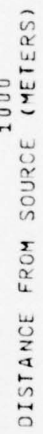


FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (OBC)-



() IDENTIFICATION: ()
 () OMEGA 1.4
 () TEST 75-002-037
 () RUN 02
 () METEOROLOGY: ()
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () 08 MAY 75
 () PAGE 14
 ()
 () NOISE SOURCE/SUBJECT: () OPERATION: ()
 () F-111F AIRCRAFT () 80% RPM
 () TF30-P-100 ENGINE () BOTH ENGINES
 () FAR FIELD NOISE () FREE FLOW

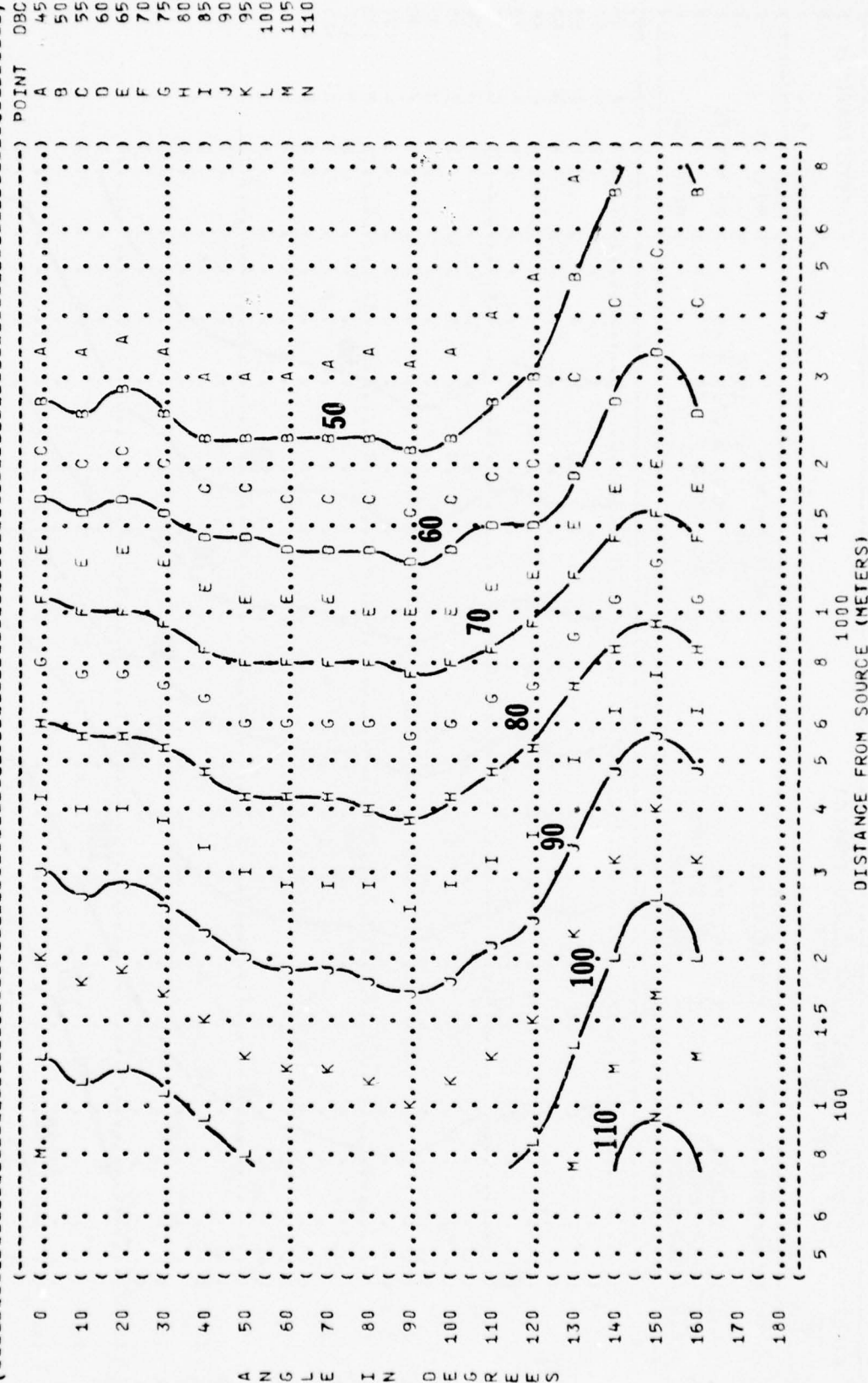


FIGURE 1 C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
 6 EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-037
 RUN 03

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 F-111F AIRCRAFT (85% RPM) TEMP = 15 C
 TF30-P-100 ENGINE (BOTH ENGINES) BAR PRESS = .760 M HG
 FAR FIELD NOISE (FREE FLOW) REL HUMID = 70 %

08 MAY 75
 PAGE 14

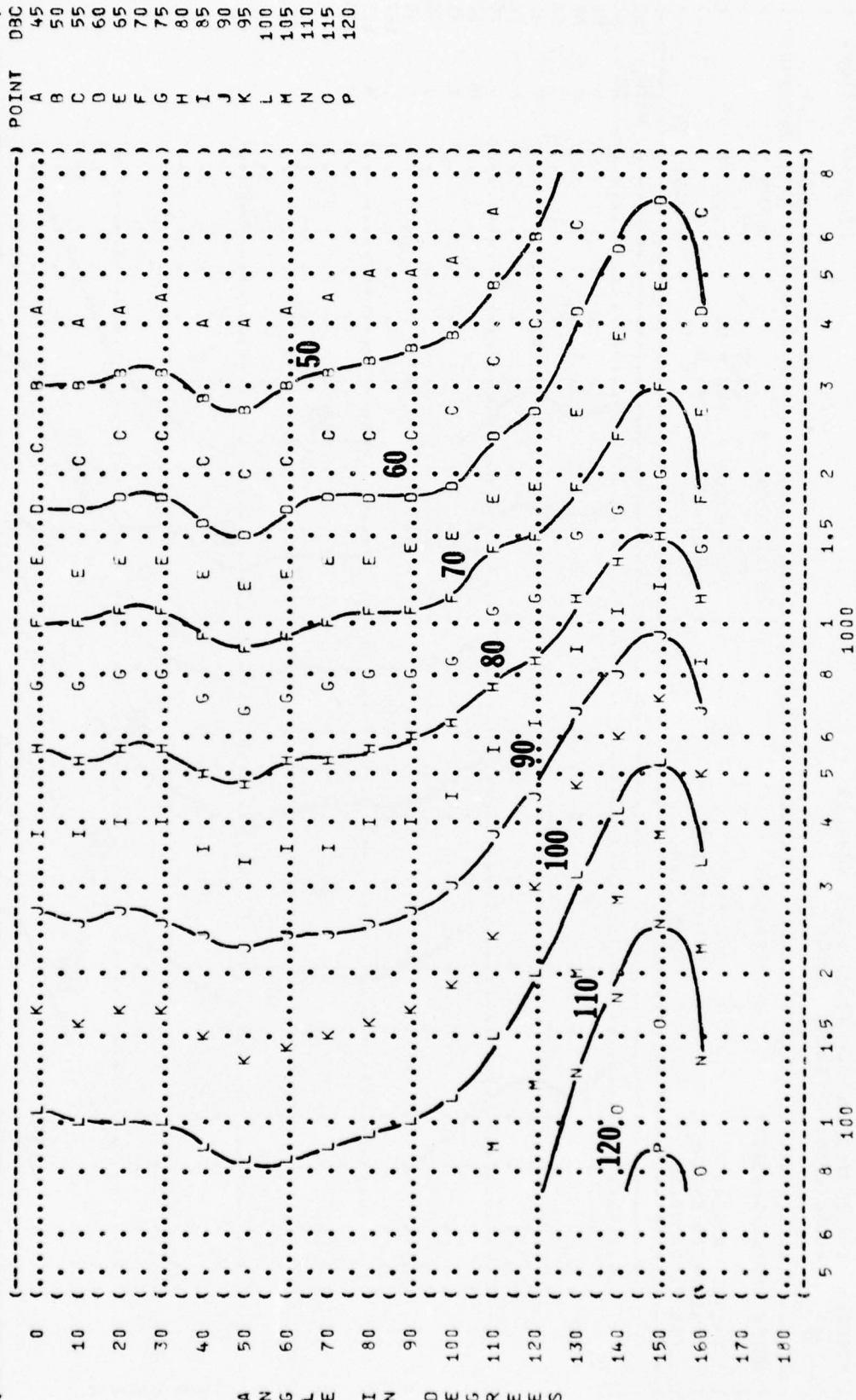
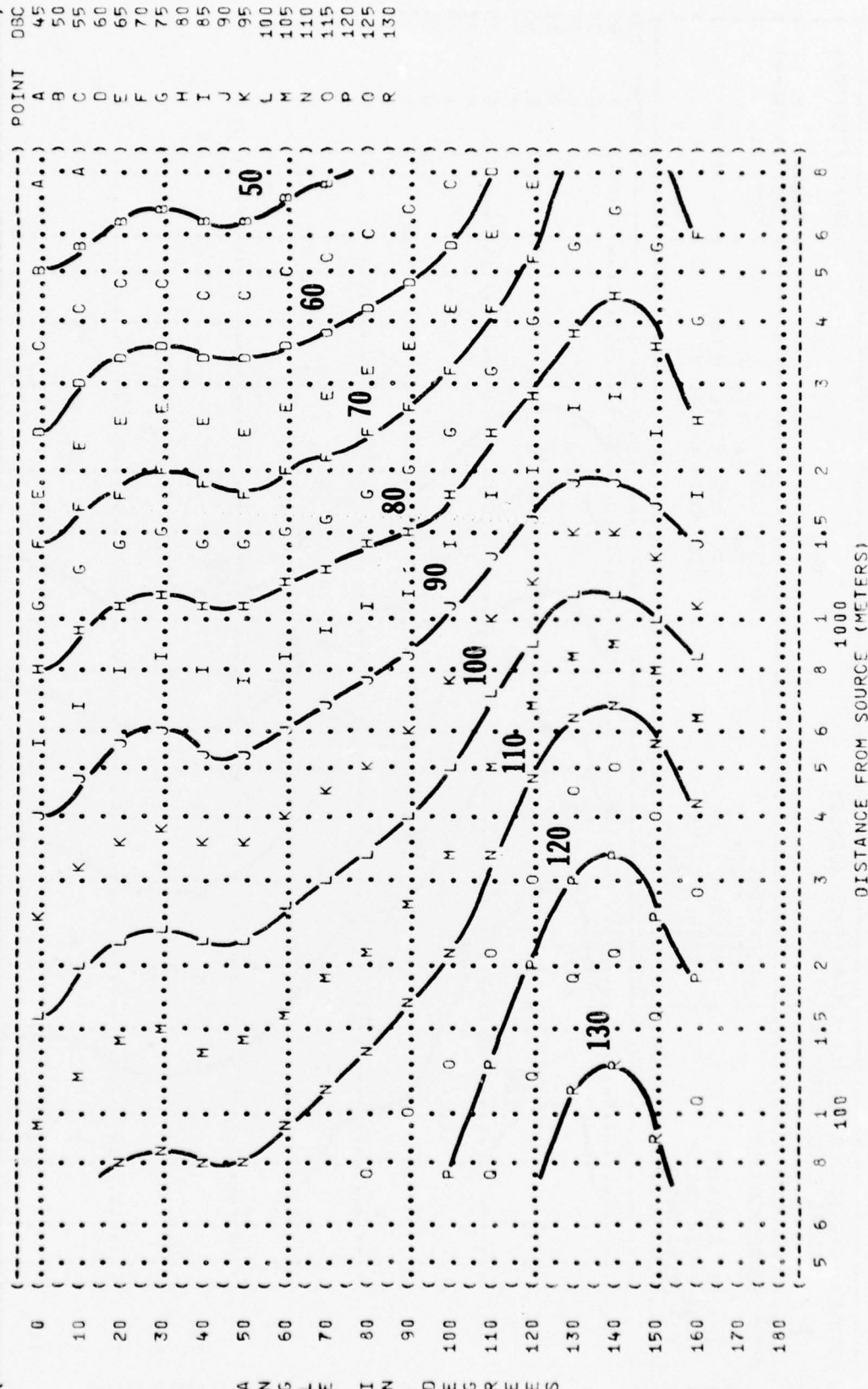
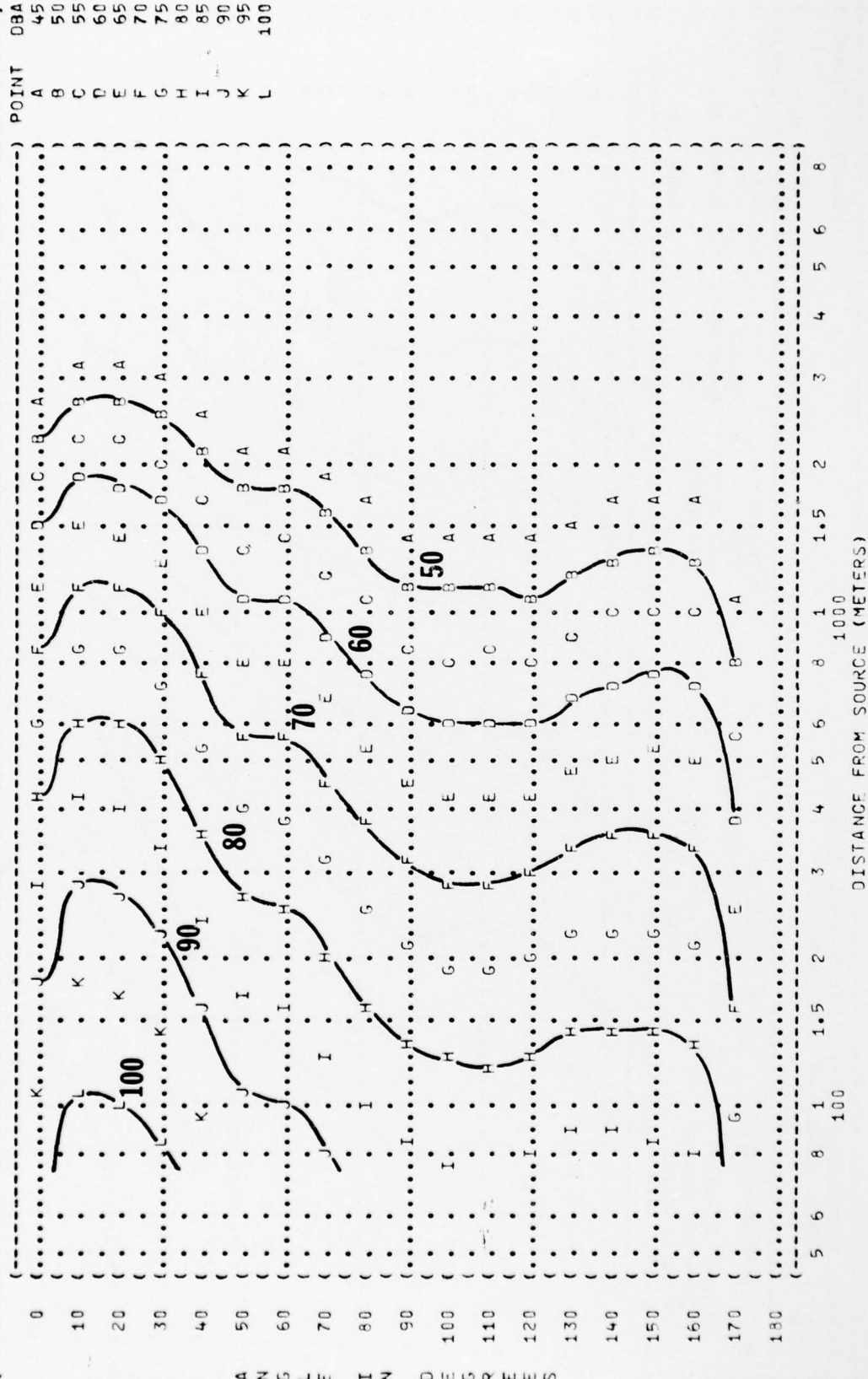


FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)	IDENTIFICATION:
EQUAL LEVEL CONTOURS (D9C)	
6	OMEGA 1.4
	TEST 75-002-037
	RUN 06
NOISE SOURCE/SUBJECT:	METEOROLOGY:
(AFTERBURNER POWER	TEMP 15 C
(95% RPM	BAR PRESS = .760 M HG
(SINGLE ENGINE	REL HUMID = 70 %
(FREE FLOW	PAGE 14

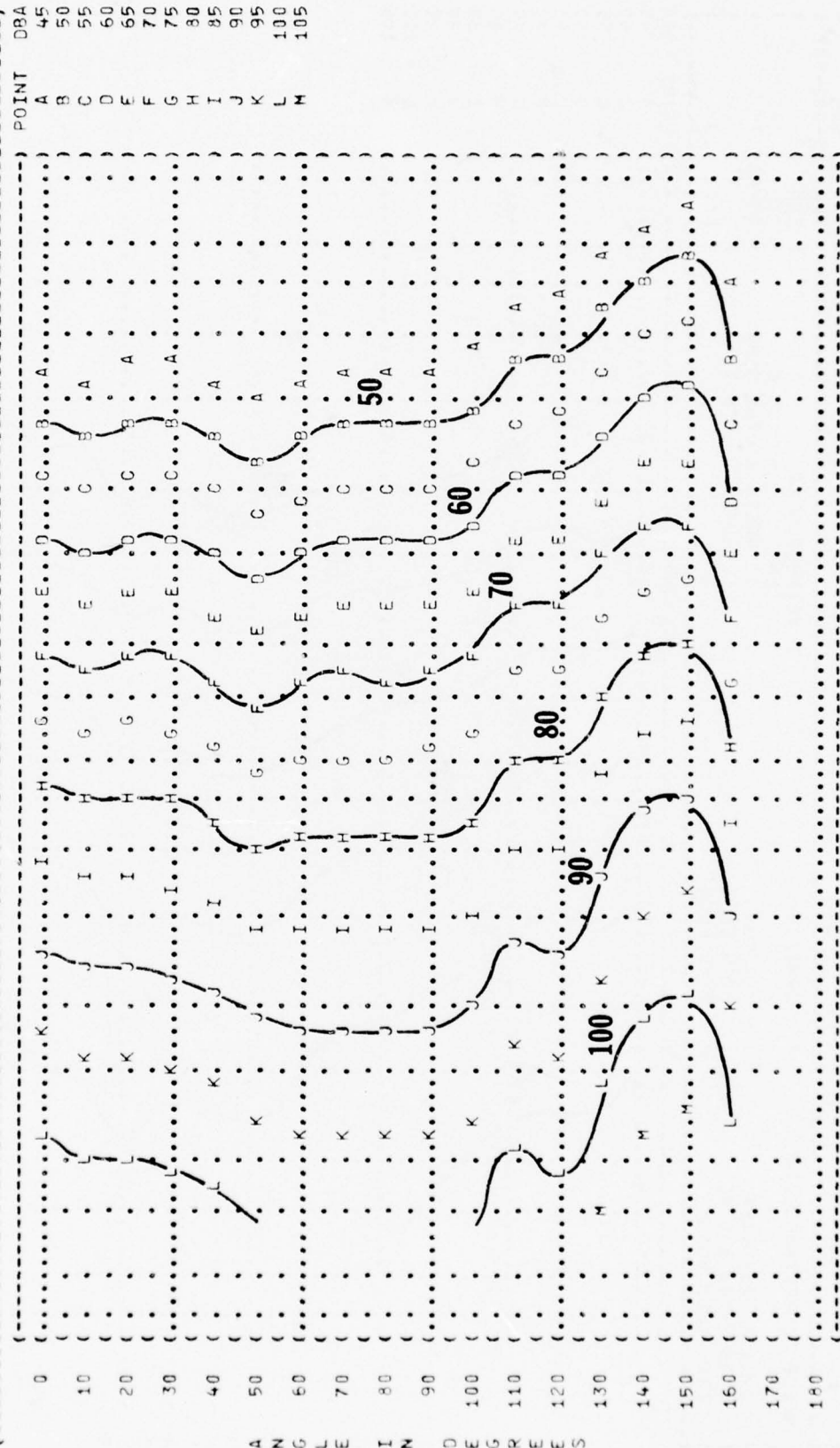


(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7
 (EQUAL LEVEL CONTOURS (DBA)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-037
 () RUN 01
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 15
 () NOISE SOURCE/SUBJECT:
 () OPERATION:
 () IDLE POWER
 () 65% RPM
 () BOTH ENGINES
 () FREE FLOW
 () F-111F AIRCRAFT
 () TF30-P-100 ENGINE
 () FAR FIELD NOISE

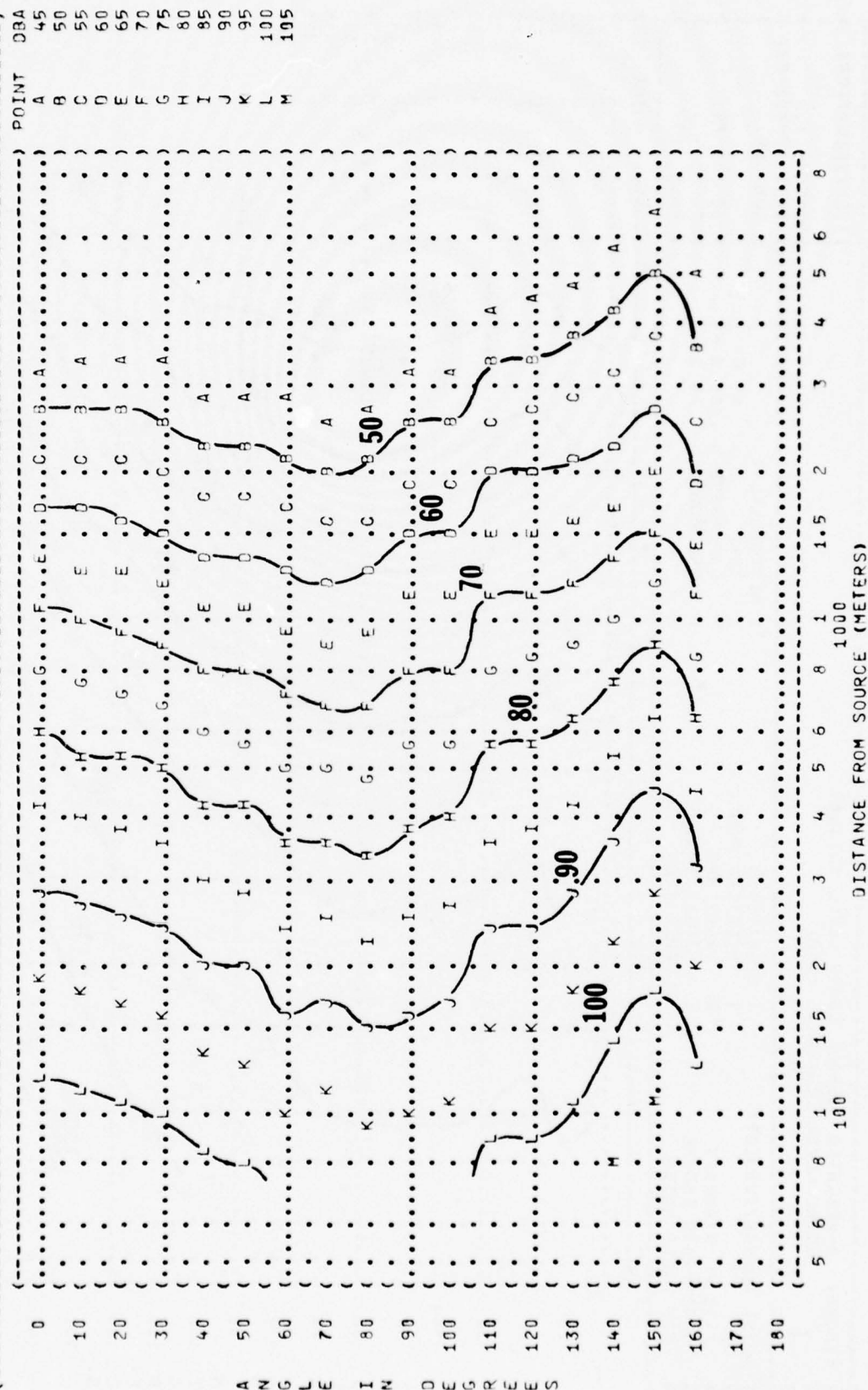


A N G L E I N D E G R E E S

((FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 ((7 EQUAL LEVEL CONTOURS (DBA)
 (() IDENTIFICATION:
 (() OMEGA 1.4
 (() TEST 75-002-037
 (() RUN 03
 (() METEOROLOGY:
 (() TEMP = 15 C
 (() BAR PRESS = .760 M HG
 (() REL HUMID = 70 %
 (() 08 MAY 75
 (() PAGE 15
 (() NOISE SOURCE/SUBJECT:
 (() OPERATION:
 (() 85% RPM
 (() BOTH ENGINES
 (() FREE FLOW
 (() F-111F AIRCRAFT
 (() TF30-P-100 ENGINE
 (() FAR FIELD NOISE



(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL {OASLA}
 (7
 (EQUAL LEVEL CONTOURS (DBA)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-037
 () RUN 04
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () 08 MAY 75
 () PAGE 15
 () NOISE SOURCE/SUBJECT:
 () OPERATION:
 () 85% RPM
 () SINGLE ENGINE
 () FREE FLOW
 () F-111F AIRCRAFT
 () TF30-P-100 ENGINE
 () FAR FIELD NOISE



(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA))
 (7)
 (NOISE SOURCE/SUBJECT:)
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MILITARY POWER)
 (94.8% RPM)
 (SINGLE ENGINE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-037)
 (RUN 05)
 (08 MAY 75)
 (PAGE 15)

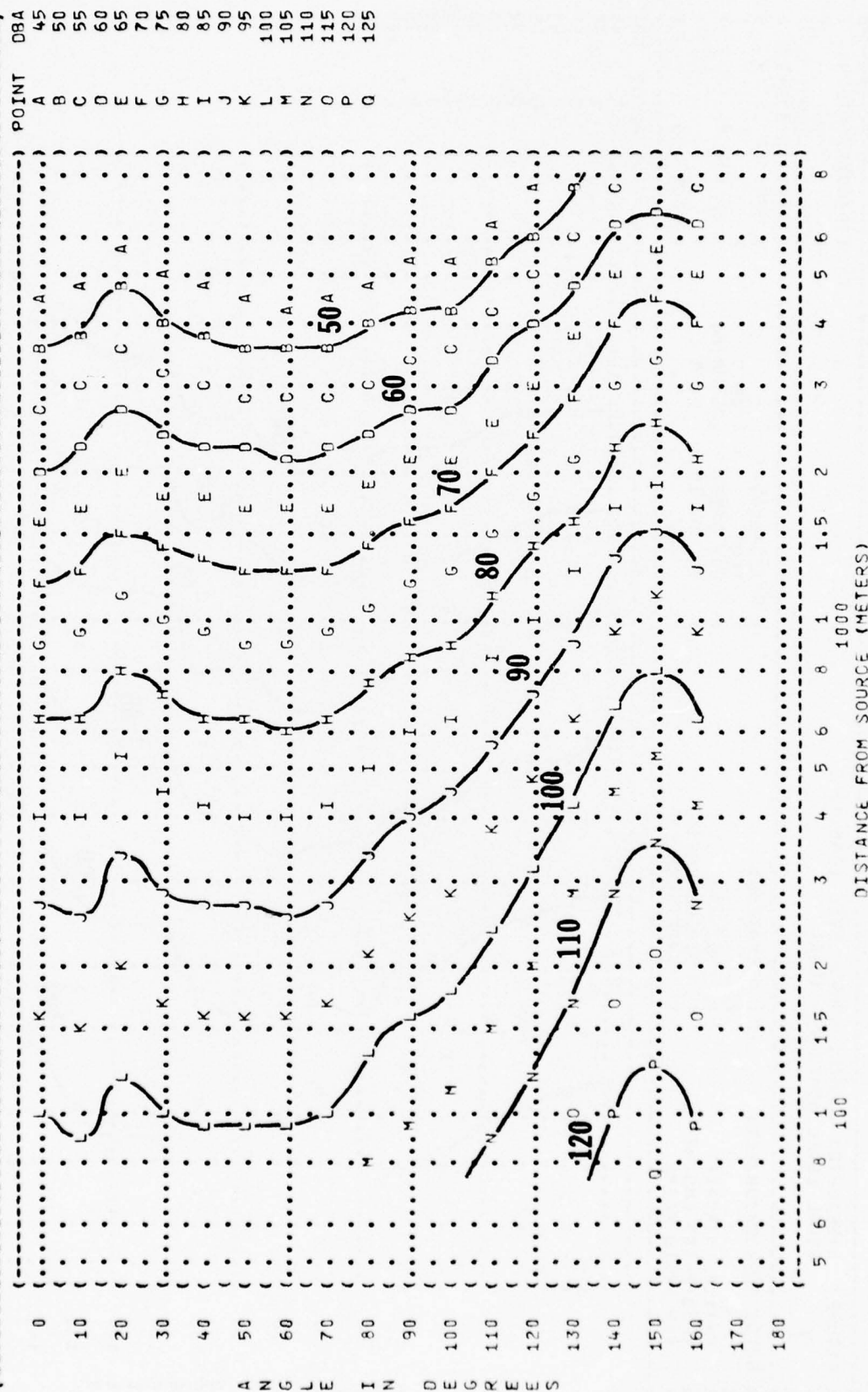
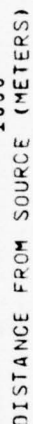


FIGURE: A-WEIGHTED OVERALL SOUND LEVEL {OASLA}
EQUAL LEVEL CONTOURS (DBA)

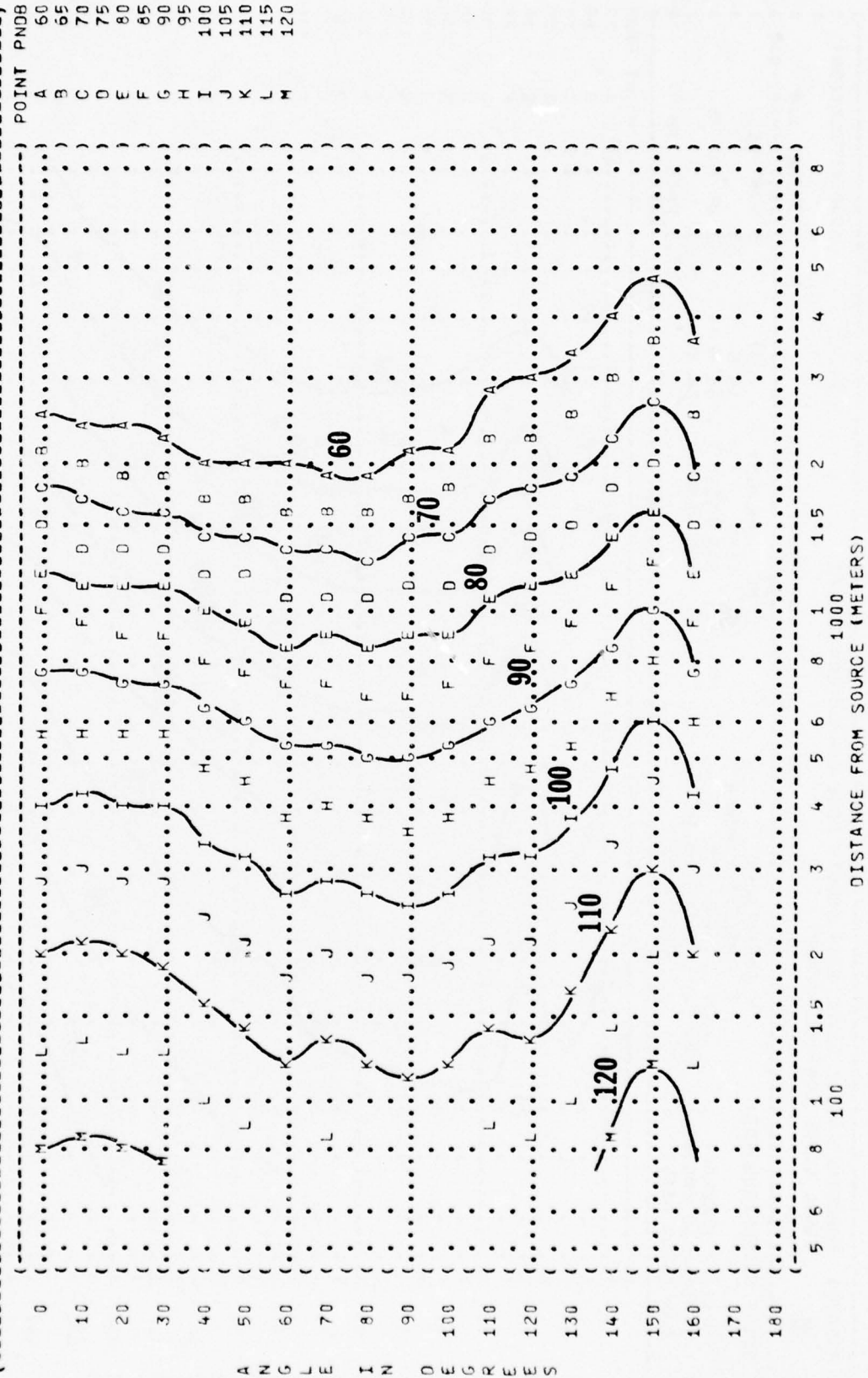


PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT}



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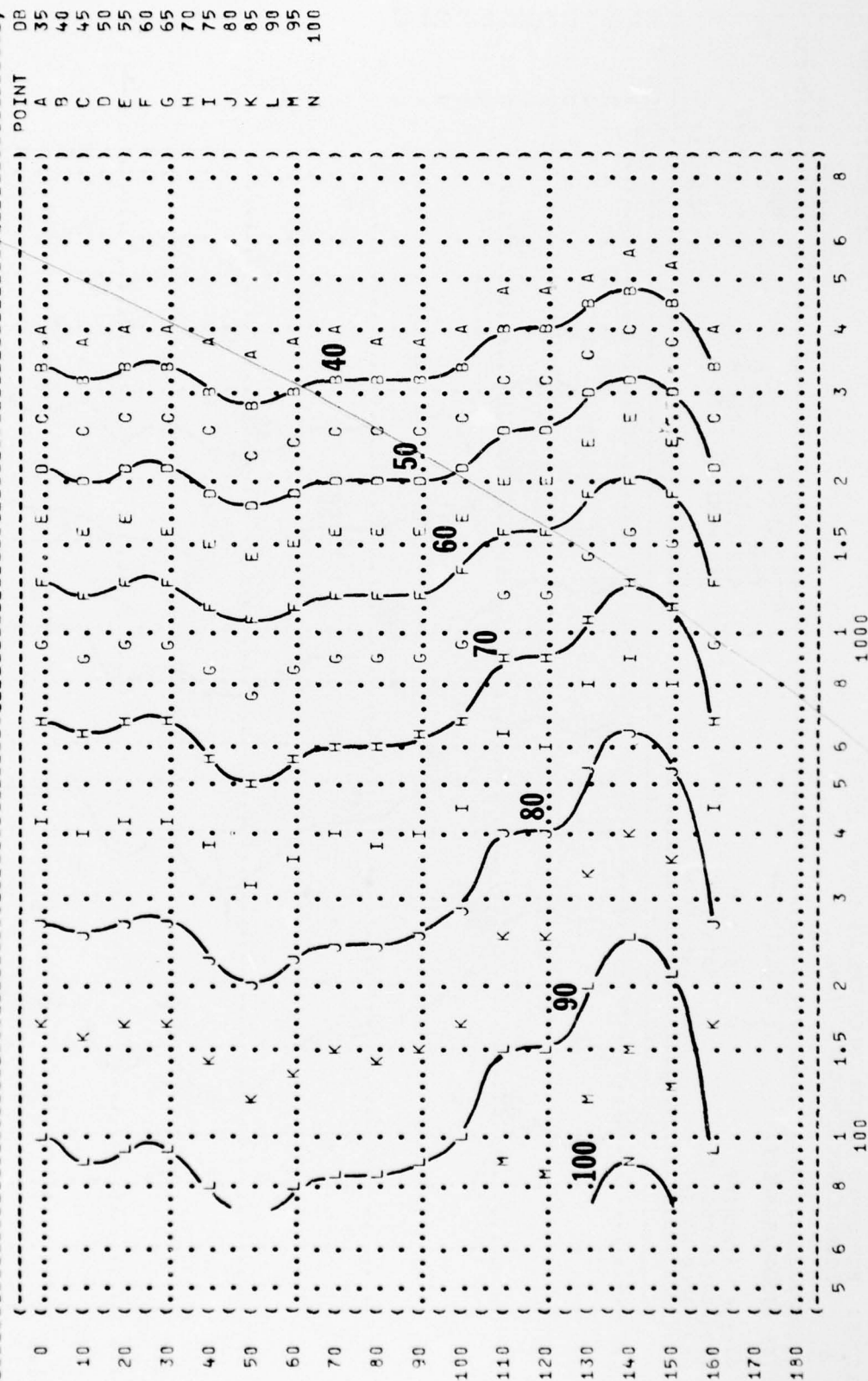
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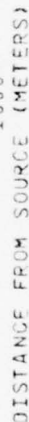


(FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 (9 EQUAL LEVEL CONTOURS (DB)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-037
 () RUN 03
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () OPERATION:
 () 85% RPM
 () BOTH ENGINES
 () FREE FLOW
 () NOISE SOURCE/SUBJECT:
 () F-111F AIRCRAFT
 () TF30-P-100 ENGINE
 () FAR FIELD NOISE
 () PAGE 17

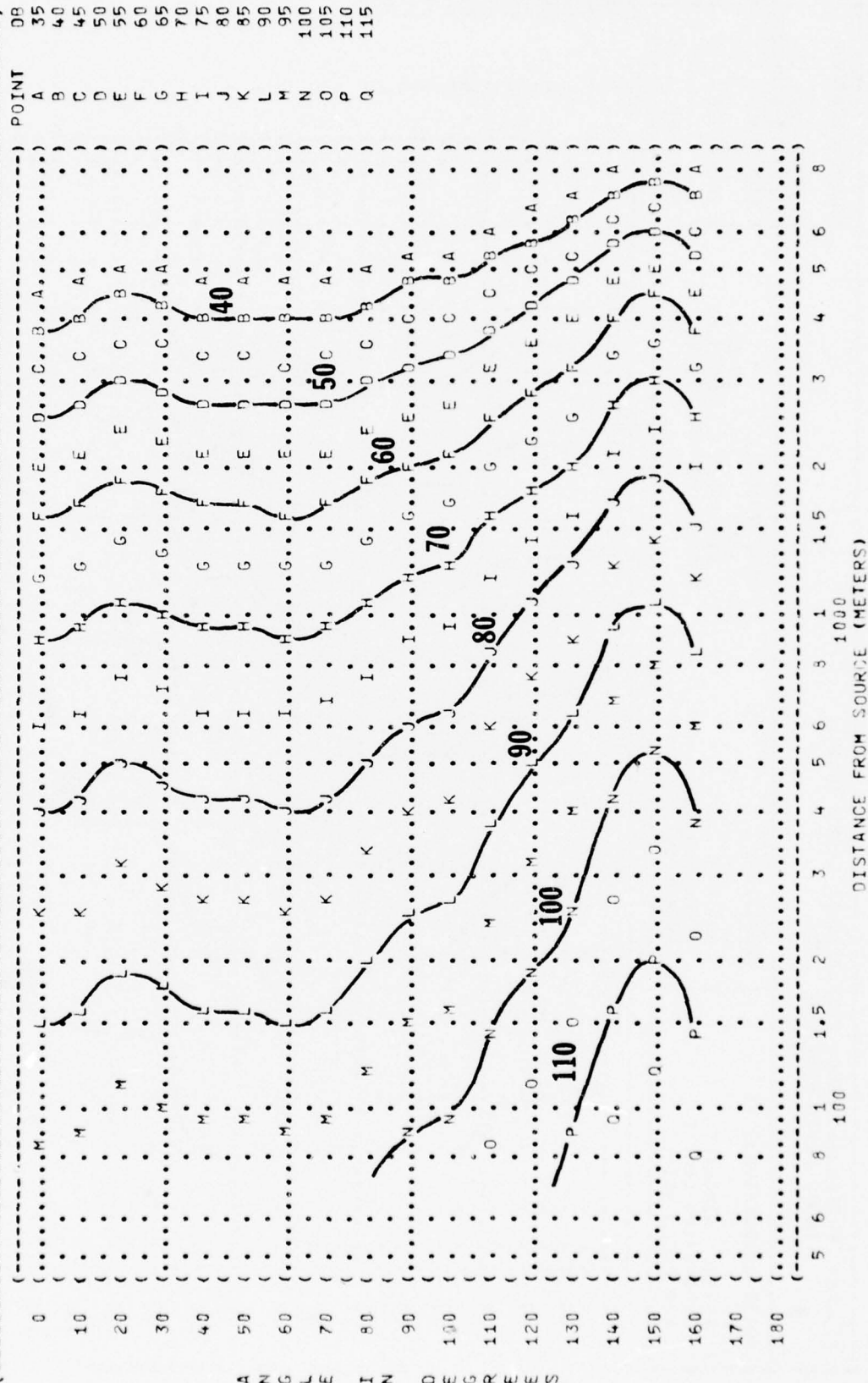


A N G L E I N D E G R E E S

08

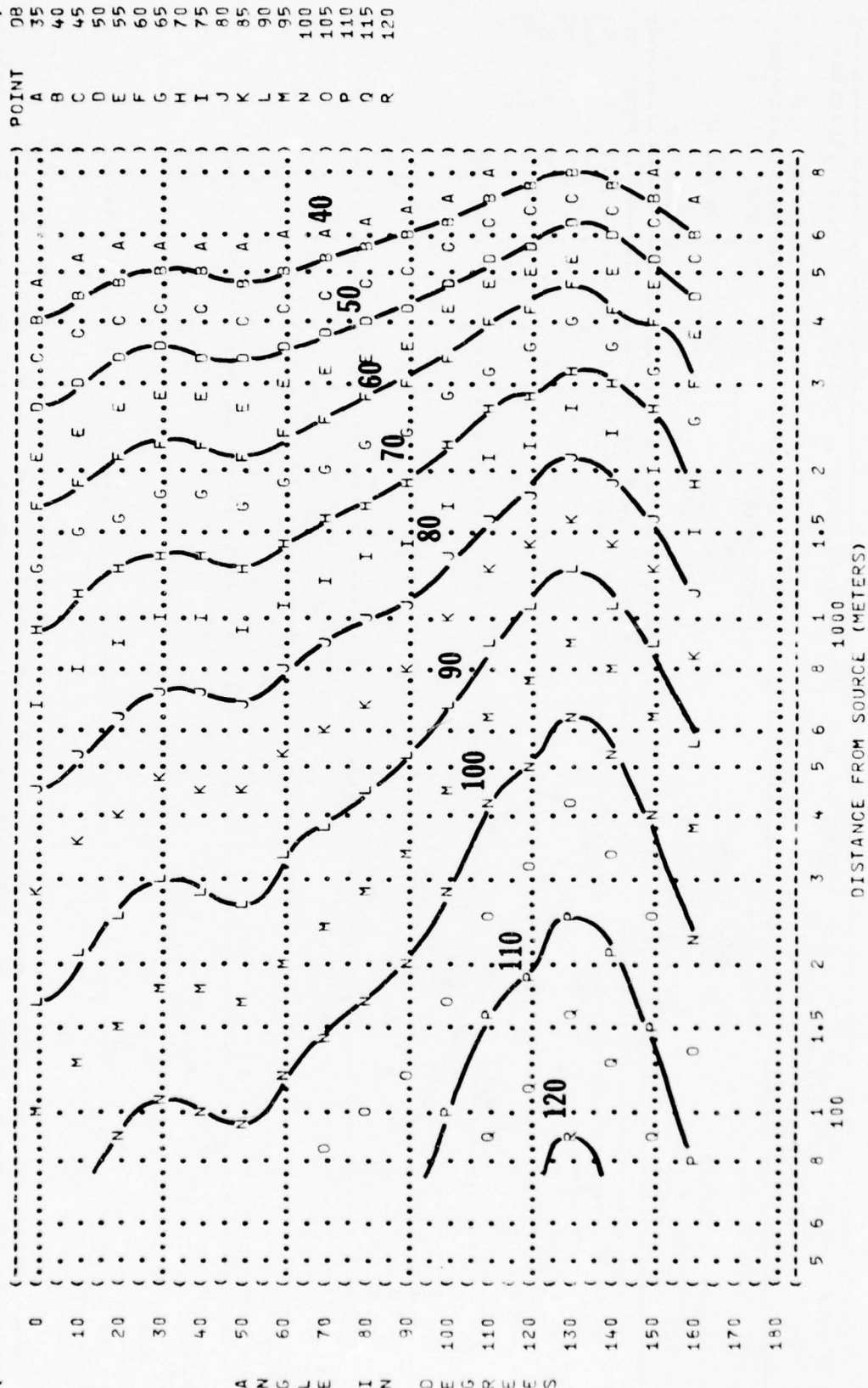



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( ( FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) ) )
( ( EQUAL LEVEL CONTOURS (DB) ) )
( ( 9 ) )
( ( NOISE SOURCE/SUBJECT: ) )
( ( F-111F AIRCRAFT ) )
( ( YF30-P-100 ENGINE ) )
( ( FAR FIELD NOISE ) )
( ( OPERATION: ) )
( ( MILITARY POWER ) )
( ( 94.8% RPM ) )
( ( SINGLE ENGINE ) )
( ( FREE FLOW ) )
( ( METEOROLOGY: ) )
( ( TEMP = 15 C ) )
( ( BAR PRESS = .760 M HG ) )
( ( REL HUMID = 70 % ) )
( ( IDENTIFICATION: ) )
( ( OMEGA 1.4 ) )
( ( TEST 75-002-037 ) )
( ( RUN 05 ) )
( ( PAGE 17 ) )
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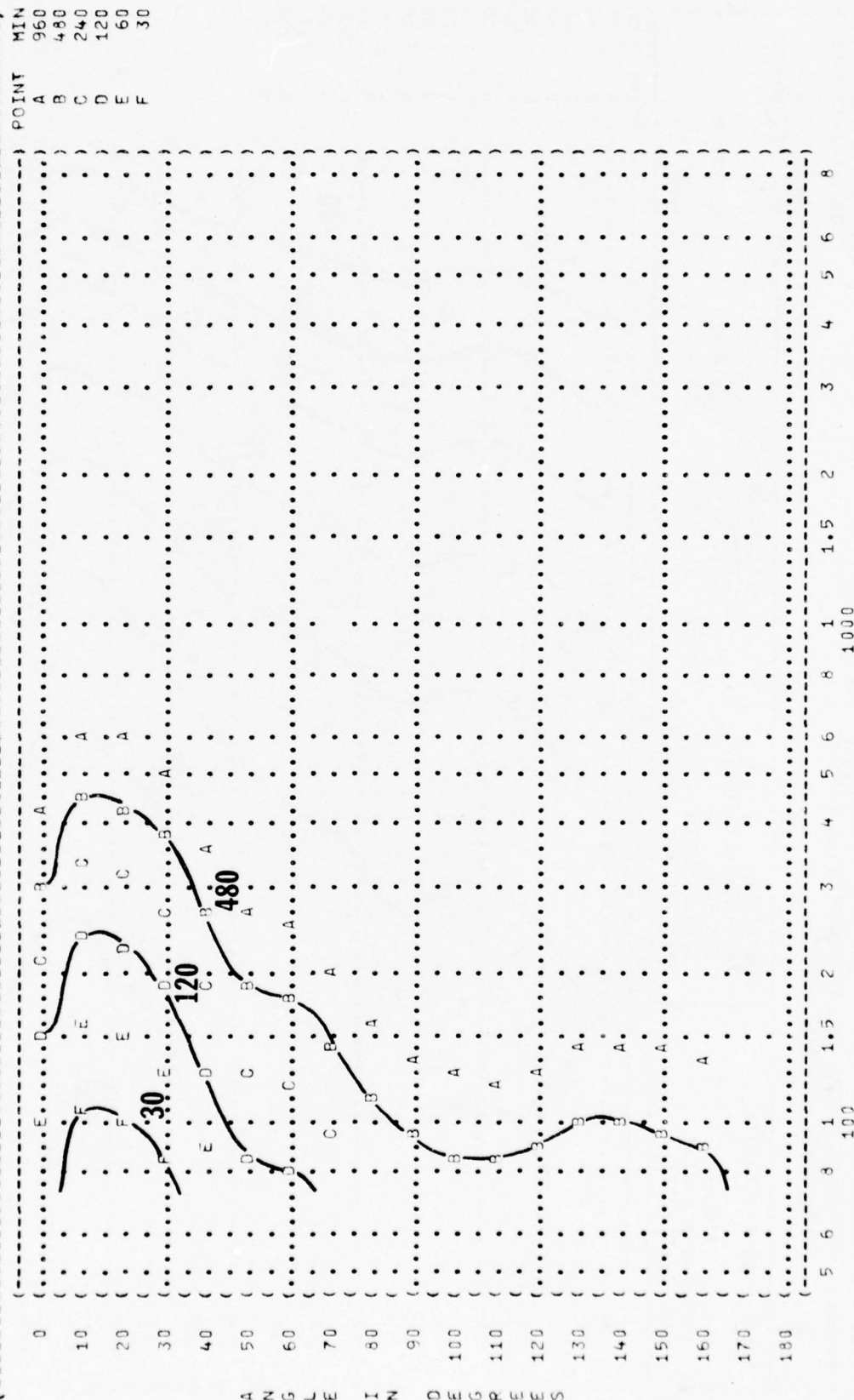


420 JW HZ 0W0XWWN

(FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 (9 EQUAL LEVEL CONTOURS (DB)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-037
 () RUN 06
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 17
 () NOISE SOURCE/SUBJECT:
 () OPERATION:
 () AFTERBURNER POWER
 () 95% RPM
 () SINGLE ENGINE
 () FREE FLOW
 () F-111F AIRCRAFT
 () TF30-P-100 ENGINE
 () FAR FIELD NOISE



```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( 10 EQUAL TIME CONTOURS (MINUTES) ) )
( NO PROTECTION ) ) OMEGA 1.4
( ) TEST 75-002-037
( ) RUN 01
( ) METEOROLOGY:
( ) TEMP = 15 C
( ) BAR PRESS = .760 M HG
( ) REL HUMID = 70 %
( ) PAGE 7
(-----)
```



DISTANCE FROM SOURCE (METERS)

73

DISTANCE FROM SOURCE (METERS)

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

10

NOISE SOURCE/SUBJECT: F-111F AIRCRAFT
TF30-P-100 ENGINE
FAR FIELD NOISE

(OPERATION: 80% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY: TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION: OMEGA 1.4
TEST 75-002-037
RUN 02 PAGE 12

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY \angle AT LEFT)

UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

V-51R EAR PLUGS

DISTANCE FROM SOURCE (METERS)

10

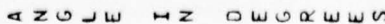


FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

EQUAL TIME CONTOURS (MINUTES)

10 AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)

((TEMP = 15 C)

(F-111F AIRCRAFT (85% RPM) BAR PRESS = .760 M HG)

(TF30-P-100 ENGINE (BOTH ENGINES) REL HUMID = 70 %)

(FAR FIELD NOISE (FREE FLOW))

() PAGE 9)

IDENTIFICATION:)

OMEGA 1.4

TEST 75-002-037

RUN 03

08 MAY 75

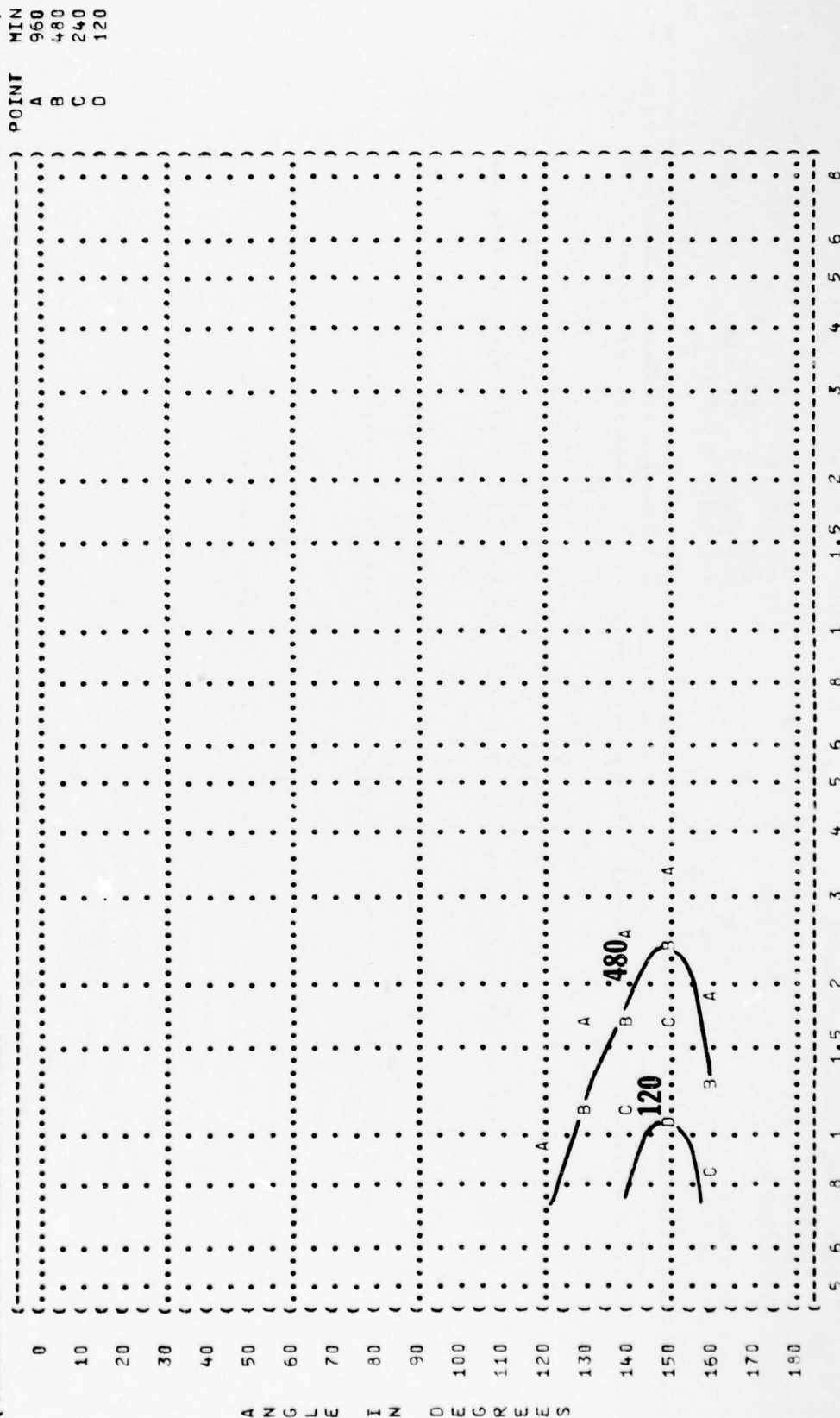


FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
)
OMEGA 1.4

```
NOISE SOURCE/SUBJECT:      ) OPERATION :      ) METEOROLOGY:      ) RUN   03
(                               ) TEMP          =    15 C       )
(                               ) BAR PRESS     =   .760 M HG   )
( F-11F AIRCRAFT             ) 85% RPM         ) 08 MAY 75
TF30-P-100 ENGINE            ) BOTH ENGINES    )
FAIR FIELD NOISE              ) FREE FLOW       ) PAGE  11
```

	(-----MIN-----)	(-----POINT-----)
0	(.....A.....)	(.....A.....)
10	(.....A.....)	(.....B.....)
	(.....A.....)	(.....C.....)

426 JW IN DECEMBER

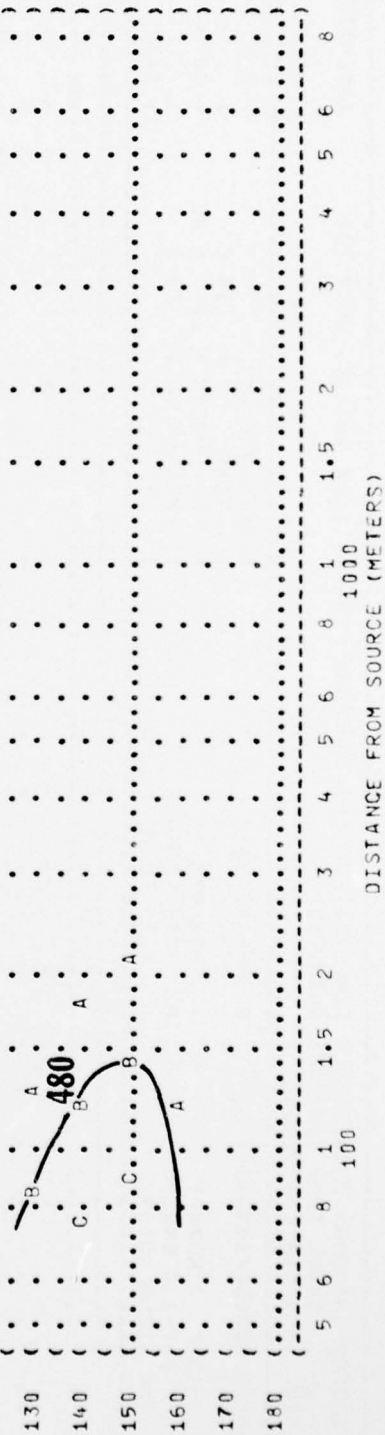


FIGURE	MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	IDENTIFICATION
10	EQUAL TIME CONTOURS (MINUTES)	
	H-133 GROUND COMMUNICATION UNIT	OMEGA 1.4
		TEST 75-002-037
NOISE SOURCE/SUBJECT	OPERATION	RUN 03
F-111F AIRCRAFT	85% RPM	15 C
TF30-P-100 ENGINE	BOTH ENGINES	BAR PRESS = .760 M HG
FAR FIELD NOISE	FREE FLOW	REL HUMID = 70 %
		PAGE 12

	MIN	POINT
0	960	A
10	480	B
20	240	C

A Z C J W H Z D W C X W W S

81



DISTANCE FROM SOURCE (METERS)

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 () EQUAL TIME CONTOURS (MINUTES))
 (10) MINIMUM QPL EAR MUFFS)
 () NOISE SOURCE/SUBJECT: (OPERATION:)
 () F-111F AIRCRAFT (85% RPM)
 () TF30-P-100 ENGINE (SINGLE ENGINE)
 () FAR FIELD NOISE (FREE FLOW)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () PAGE 8)

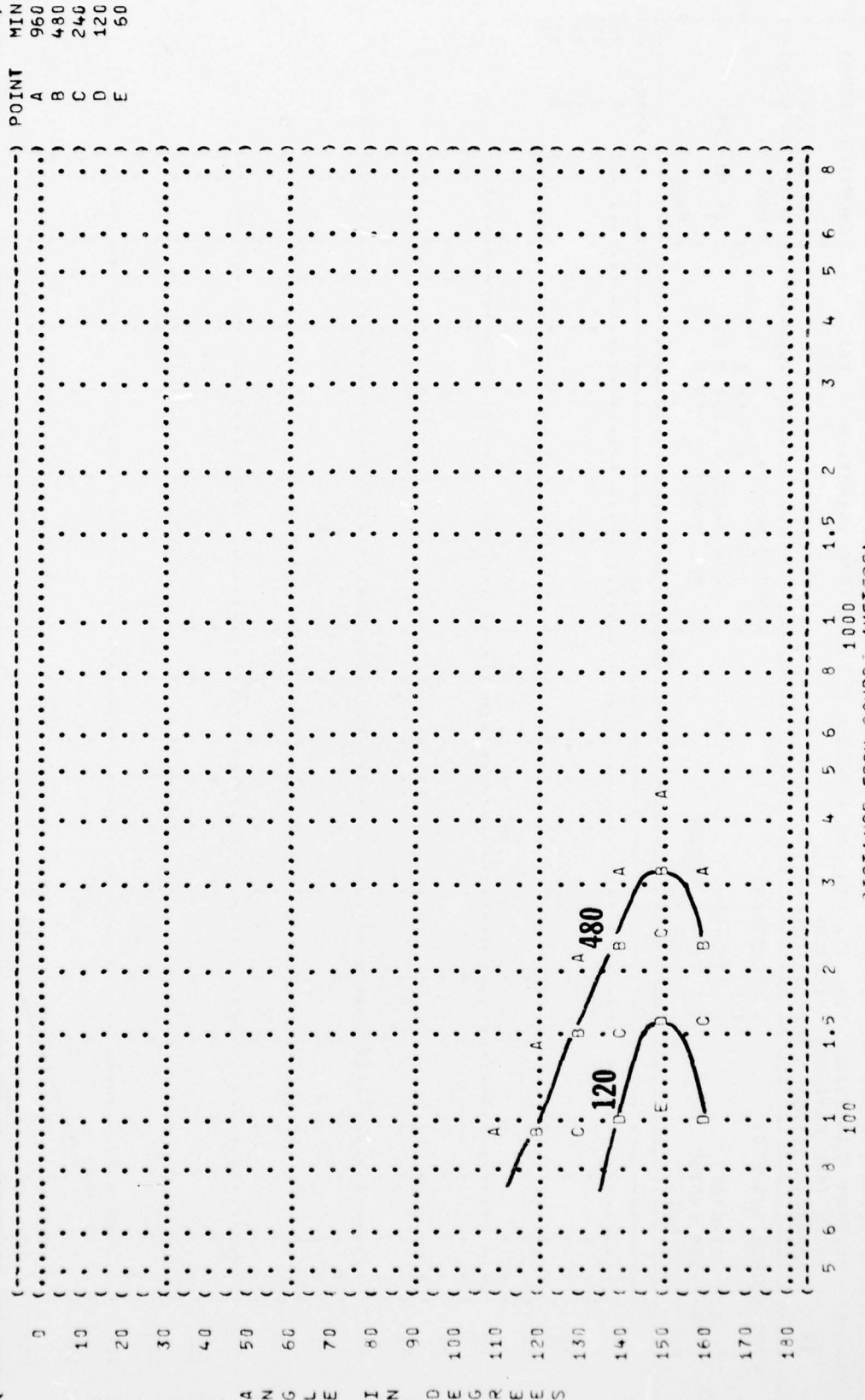
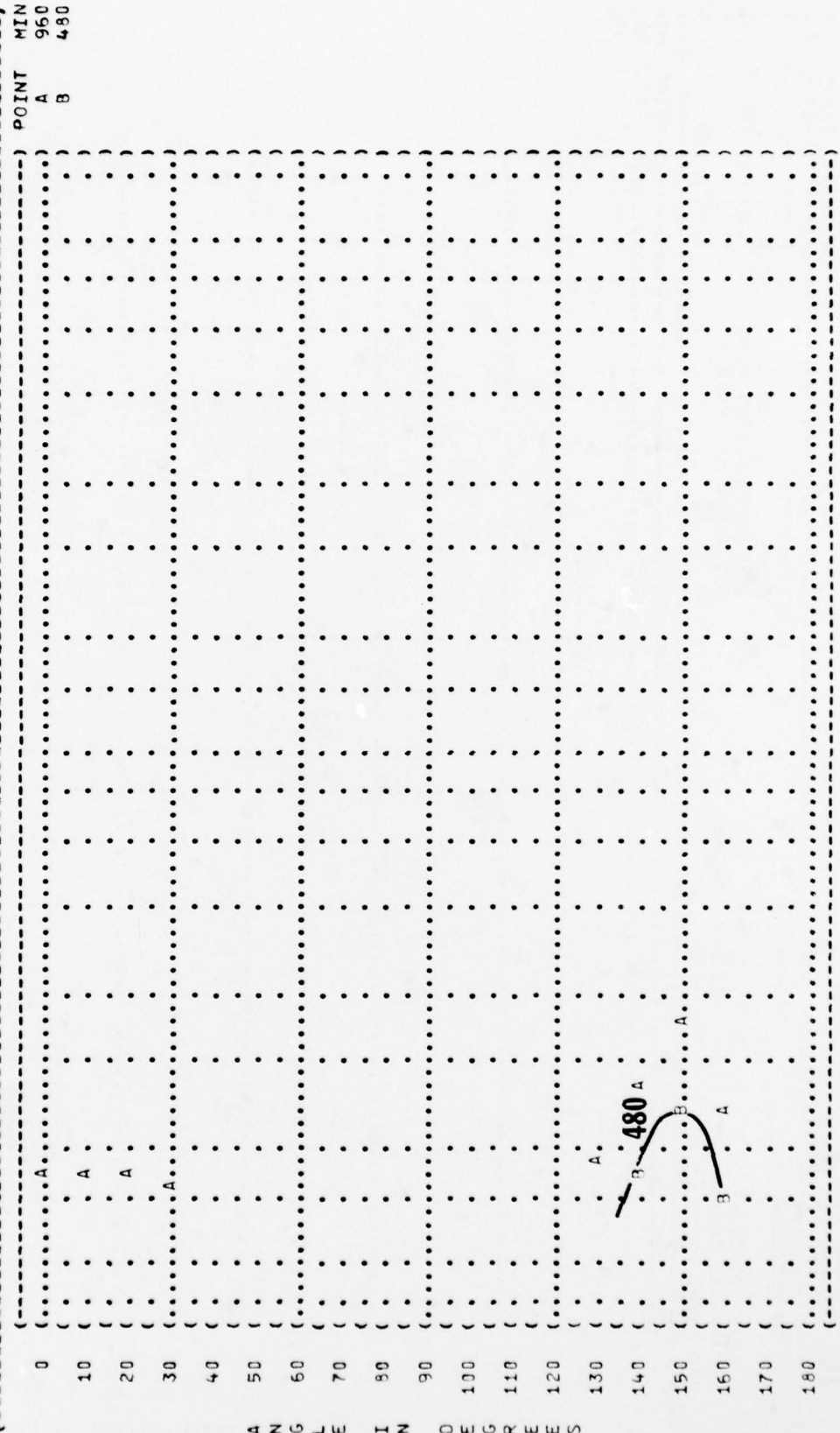


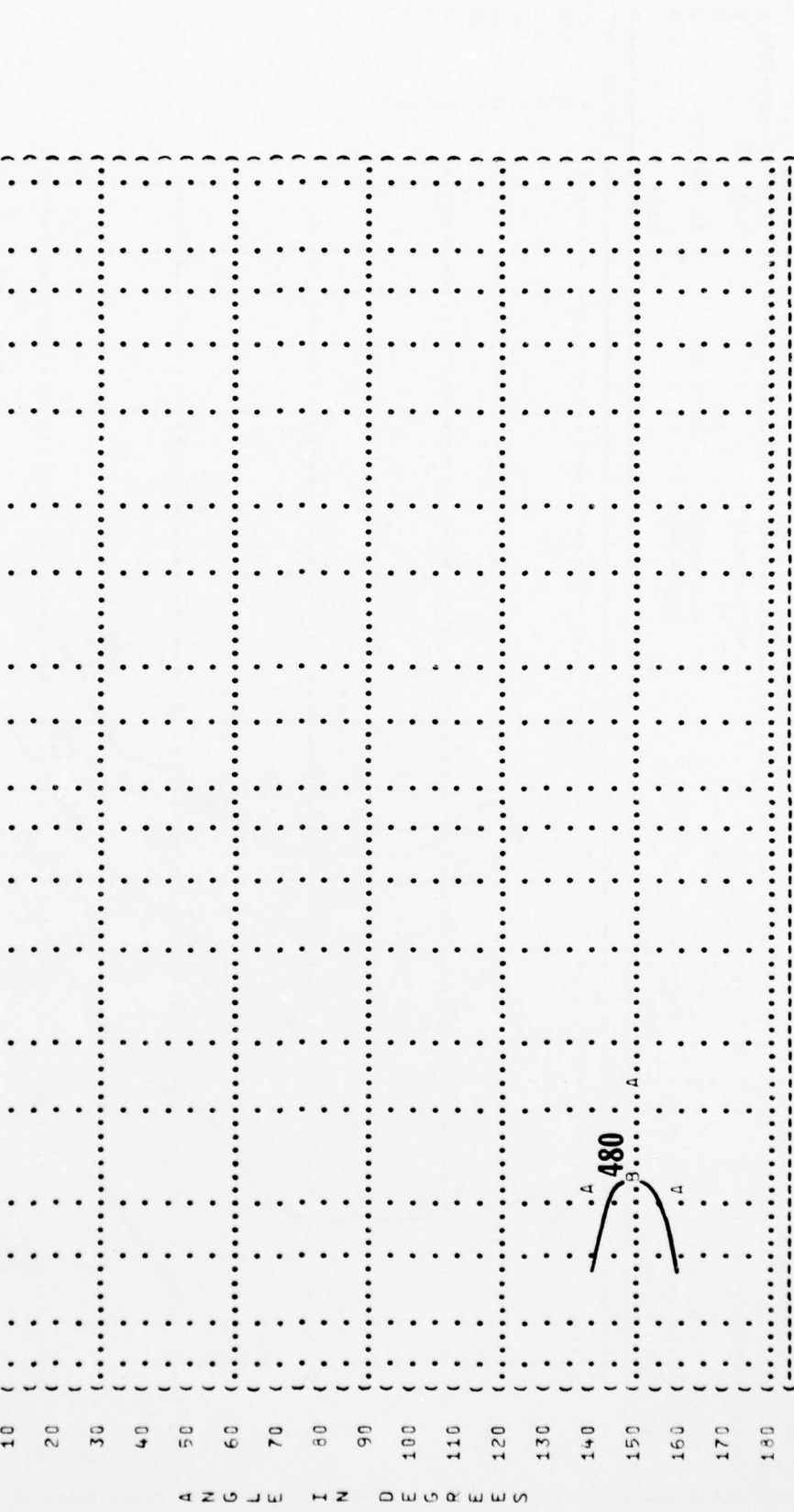
FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) IDENTIFICATION:
 10 EQUAL TIME CONTOURS (MINUTES)
 COMFIT TRIPLE FLANGE EAR PLUGS
 NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY: TEMP = 15 C
 F-111F AIRCRAFT 85% RPM
 TF30-P-100 ENGINE SINGLE ENGINE
 FAR FIELD NOISE FREE FLOW
 OMEGA 1.4
 TEST 75-002-037
 RUN 04
 08 MAY 75
 PAGE 11



ANGLE IN DEGREES

DISTANCE FROM SOURCE (METERS)

((FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 ((10 EQUAL TIME CONTOURS (MINUTES)))
 ((H-133 GROUND COMMUNICATION UNIT))
 ((NOISE SOURCE/SUBJECT:))
 ((F-111F AIRCRAFT))
 ((TF30-P-100 ENGINE))
 ((FAR FIELD NOISE))
 ((OPERATION:))
 ((85% RPM))
 ((SINGLE ENGINE))
 ((FREE FLOW))
 ((METEOROLOGY:))
 ((TEMP = 15 C))
 ((BAR PRESS = .760 M HG))
 ((REL HUMID = 70 %))
 ((RUN 04))
 ((08 MAY 75))
 ((PAGE 12))
 ((POINT MIN))
 ((A 960))
 ((B 480))



5 6 8 1 1.5 2 3 4 5 6 8
 100
 1000
 DISTANCE FROM SOURCE (METERS)

A N G L E I N D E G R E E S

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

IDENTIFICATION:
OMEGA 1.4

10

MINIMUM QPL EAR MUFFS

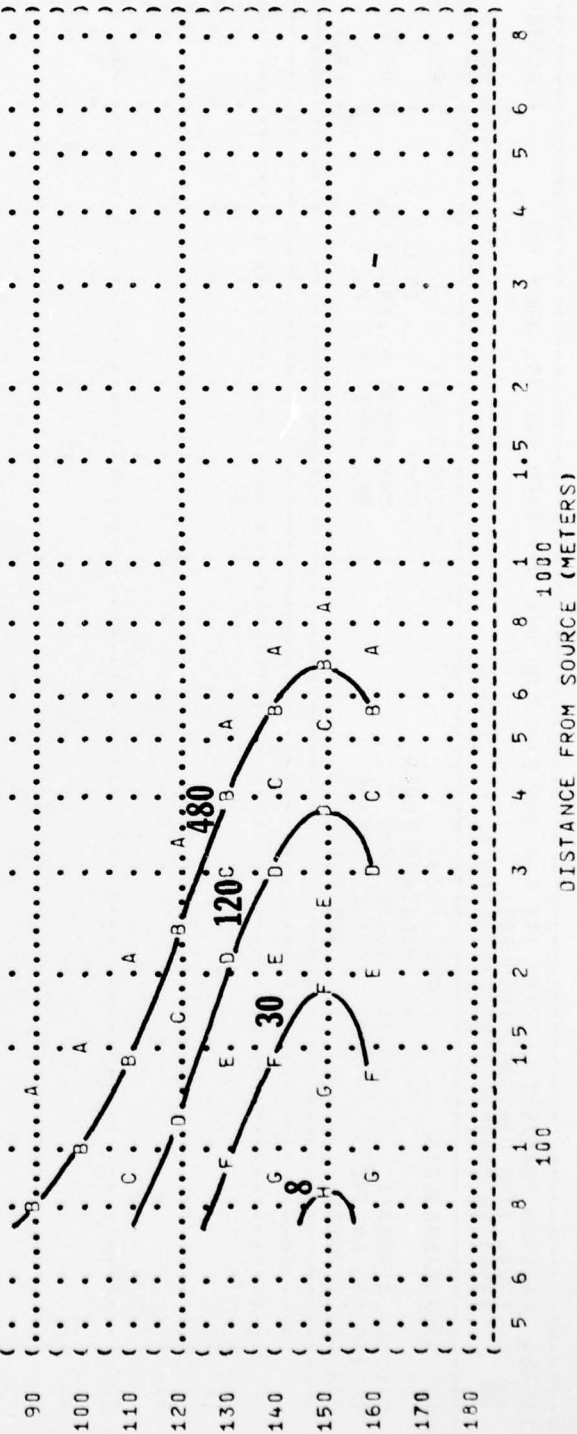
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NOISE SOURCE/SUBJECT:      ) OPERATION:      ) METEOROLOGY:      ) RUN 05
( MILITARY POWER          ) TEMP           )
( 94.8% RPM               ) BAR PRESS = .760 M HG )
( SINGLE ENGINE           ) REL HUMID = 70 %      ) 08 MAY 75
( FREE FLOW               )                      )
-----
F-111F AIRCRAFT
TF30-P-100 ENGINE
FAR FIELD NOISE

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[illegible]

100

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AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 71. F-111F AI--ETC(U)
NOV 75 R G POWELL

UNCLASSIFIED

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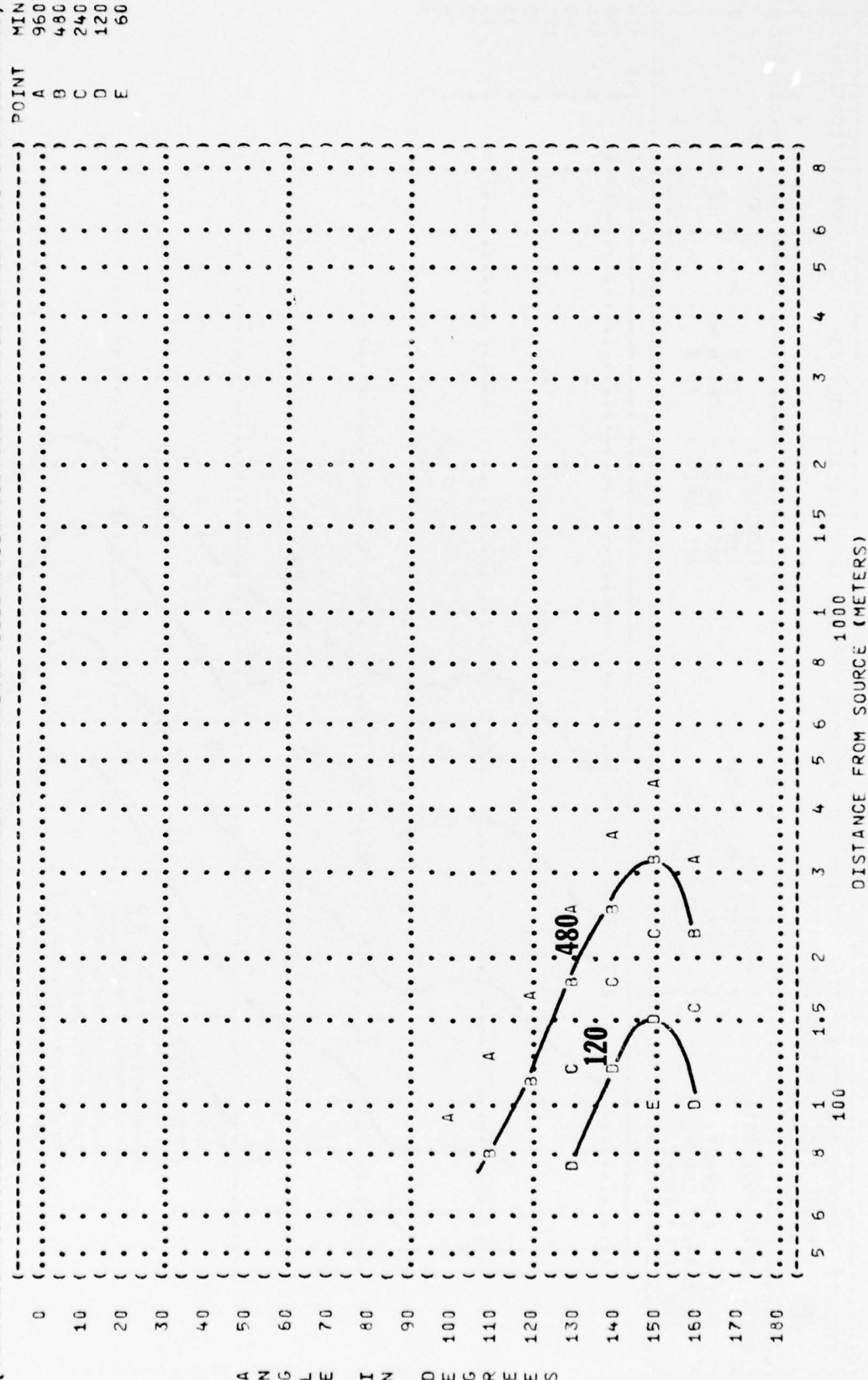
2 of 2

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END

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( ( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ( EQUAL TIME CONTOURS (MINUTES) ) ) )
( ( 10 ) ) )
( ( H-133 GROUND COMMUNICATION UNIT ) ) )
( ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )
( ( F-111F AIRCRAFT ) MILITARY POWER ) TEMP = 15 C ) )
( ( TF30-P-100 ENGINE ) 94.8% RPM ) BAR PRESS = .760 M HG ) )
( ( FAR FIELD NOISE ) SINGLE ENGINE ) REL HUMID = 70 % ) )
( ( ) FREE FLOW ) ) PAGE 12 )
```

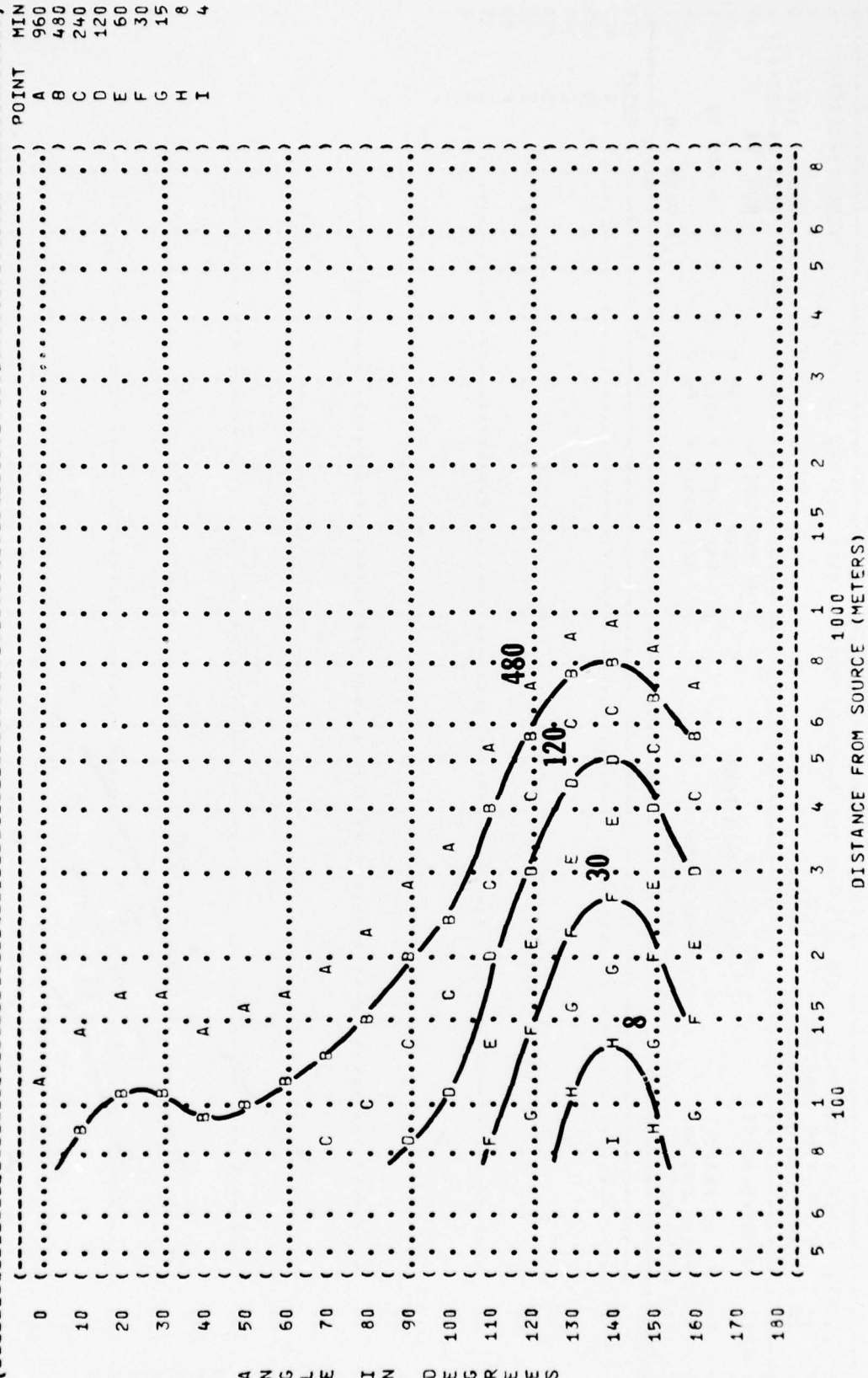


FAR FIELD NOISE	(FREE FLOW)	PAGE
(POINT

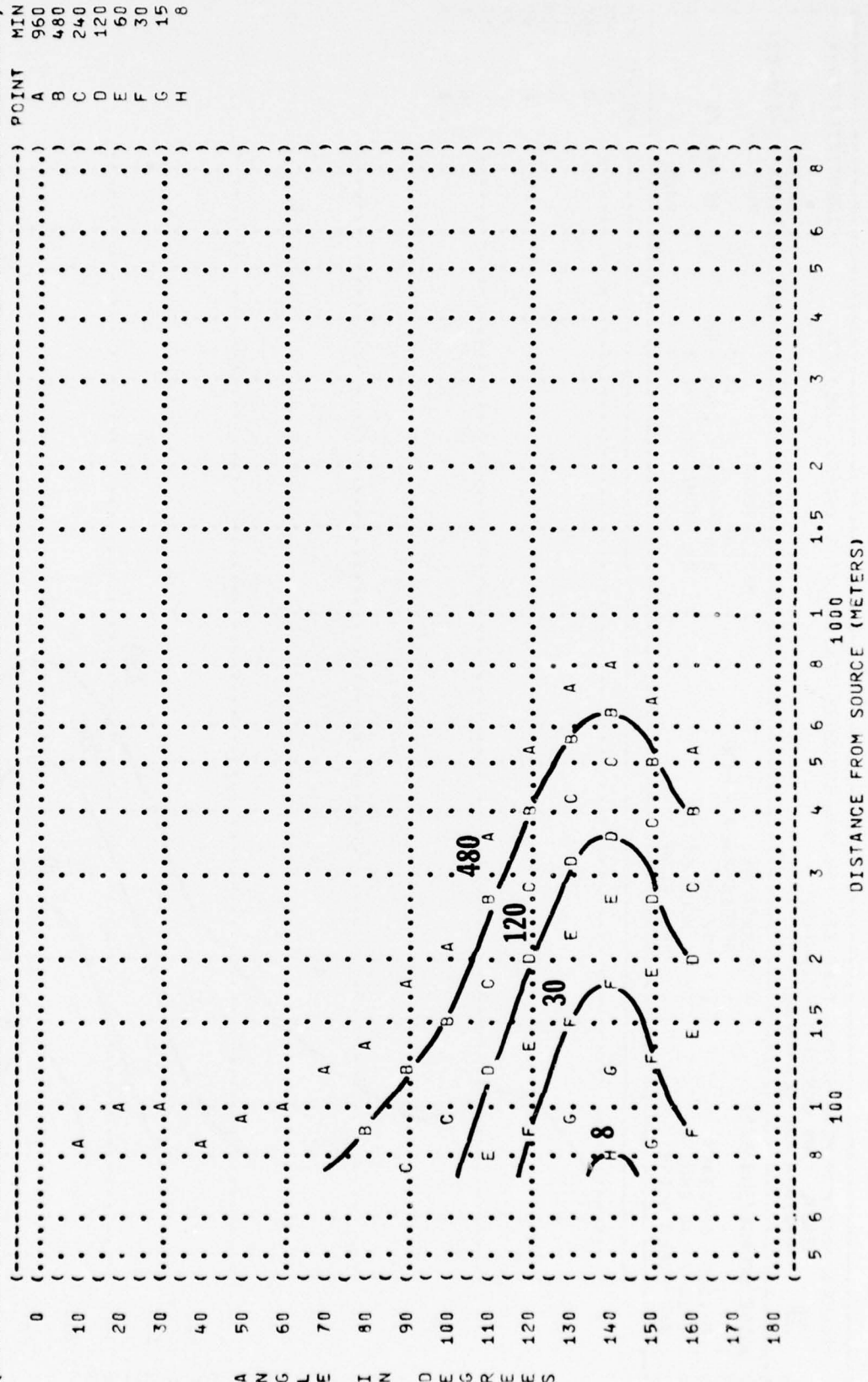


P ADDITIONAL EAR PROTECTION REQUIRED.

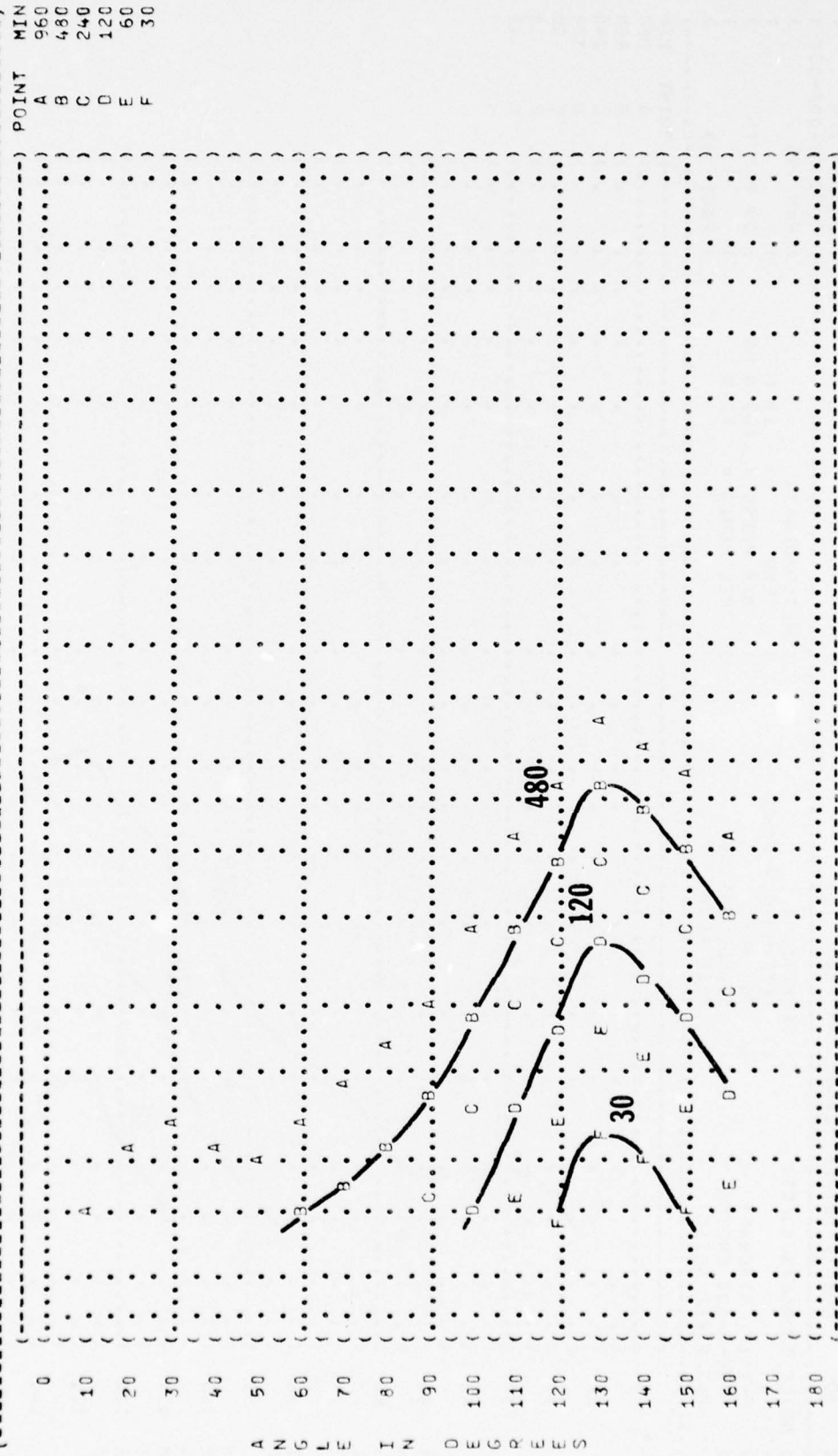
FIGURE	MAXIMUM PERMISSIBLE TIME (T)	FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	IDENTIFICATION
10	EQUAL TIME CONTOURS (MINUTES)		
	MINIMUM QPL EAR MUFFS		
NOISE SOURCE/SUBJECT	OPERATION	METEOROLOGY	
F-111F AIRCRAFT	AFTERBURNER FOWER	TEMP = 15 C	
TF30-P-100 ENGINE	95% RPM	BAR PRESS = .760 M HG	
FAR FIELD NOISE	SINGLE ENGINE	REL HUMID = 70 %	
	FREE FLOW		
			PAGE 8
			08 MAY 75
			TEST 75-002-037
			OMEGA 1.4
			RUN 06



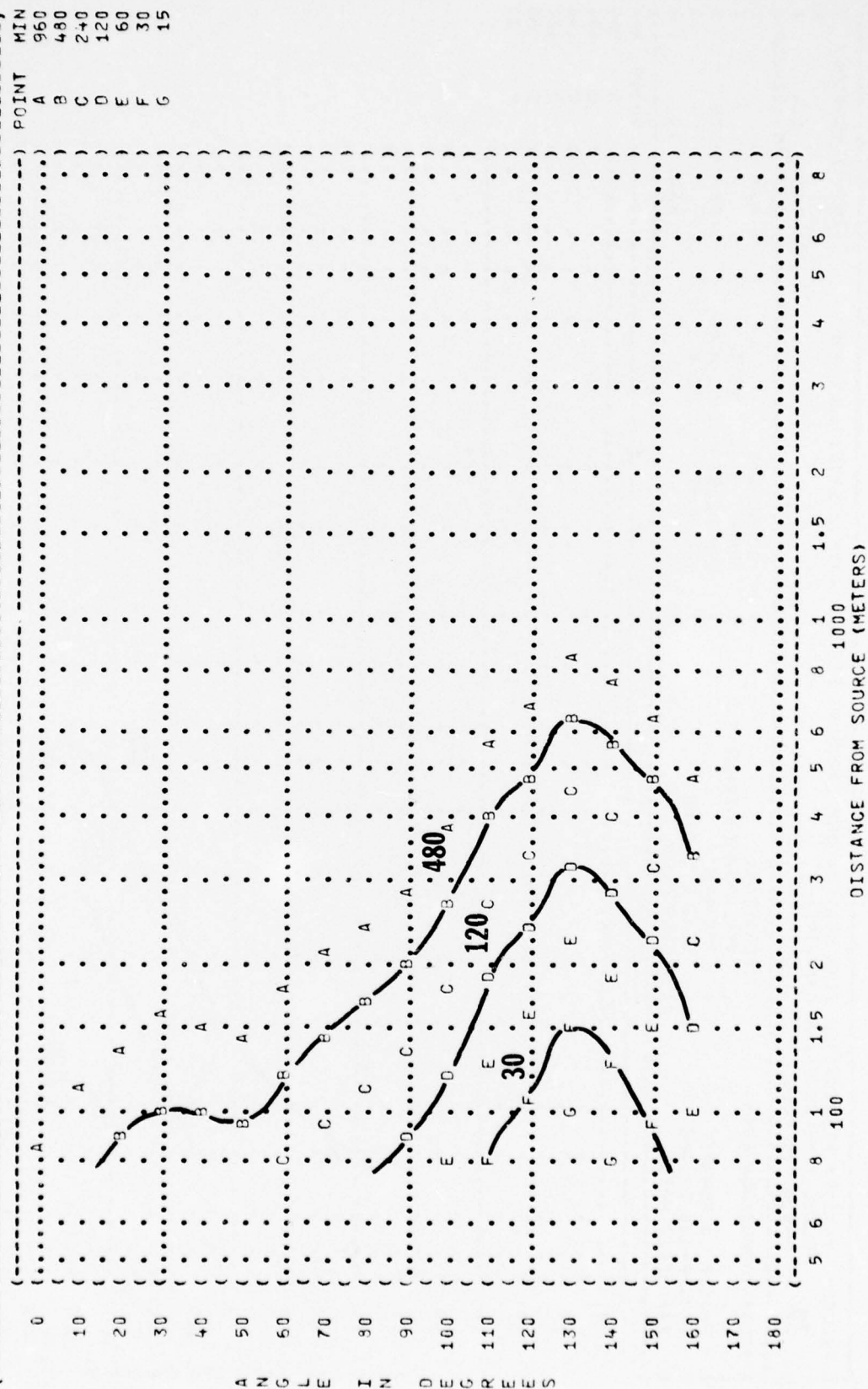
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 (10) EQUAL TIME CONTOURS (MINUTES))
 (AMERICAN OPTICAL 1700 EAR MUFFS)
 (NOISE SOURCE/SUBJECT:)
 ((OPERATION:) METEOROLOGY:)
 ((AFTERBURNER POWER) TEMP = 15 C)
 ((95% RPM) BAR PRESS = .760 M HG)
 ((SINGLE ENGINE) REL HUMID = 70 %)
 ((FREE FLOW))
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 () PAGE 9)
 () OMEGA 1.4)
 () TEST 75-002-037)
 () RUN 06)



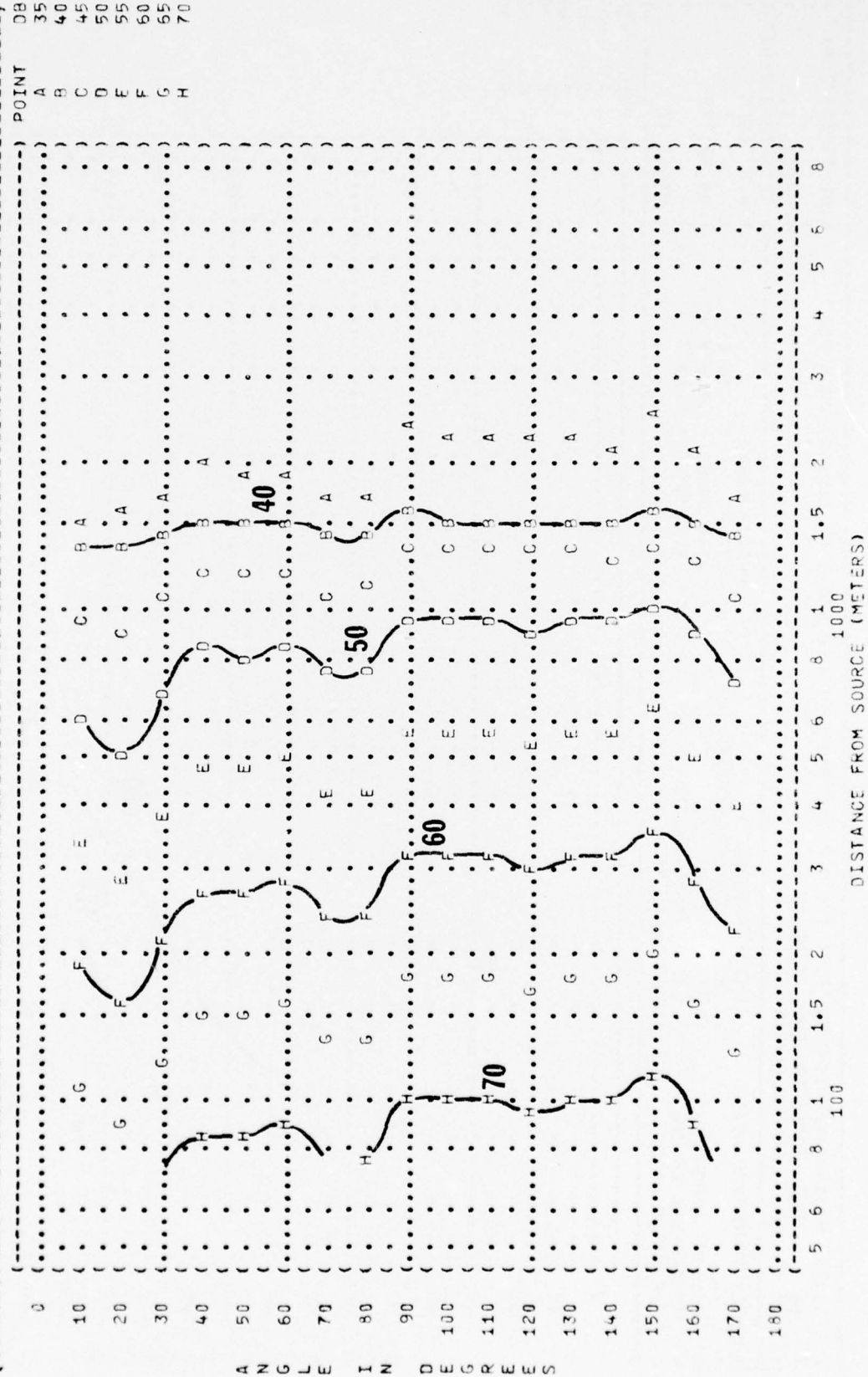
(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (10 EQUAL TIME CONTOURS (MINUTES)))
 (V-51R EAR PLUGS))
 (NOISE SOURCE/SUBJECT:))
 (F-111F AIRCRAFT))
 (TF30-P-100 ENGINE))
 (FAR FIELD NOISE))
 (OPERATION:))
 (AFTERBURNER FOWER))
 (95% RPM))
 (SINGLE ENGINE))
 (FREE FLOW))
 (METEOROLOGY:))
 (TEMP = 15 C))
 (BAR PRESS = .760 M HG))
 (REL HUMID = 70 %))
 (PAGE 10))



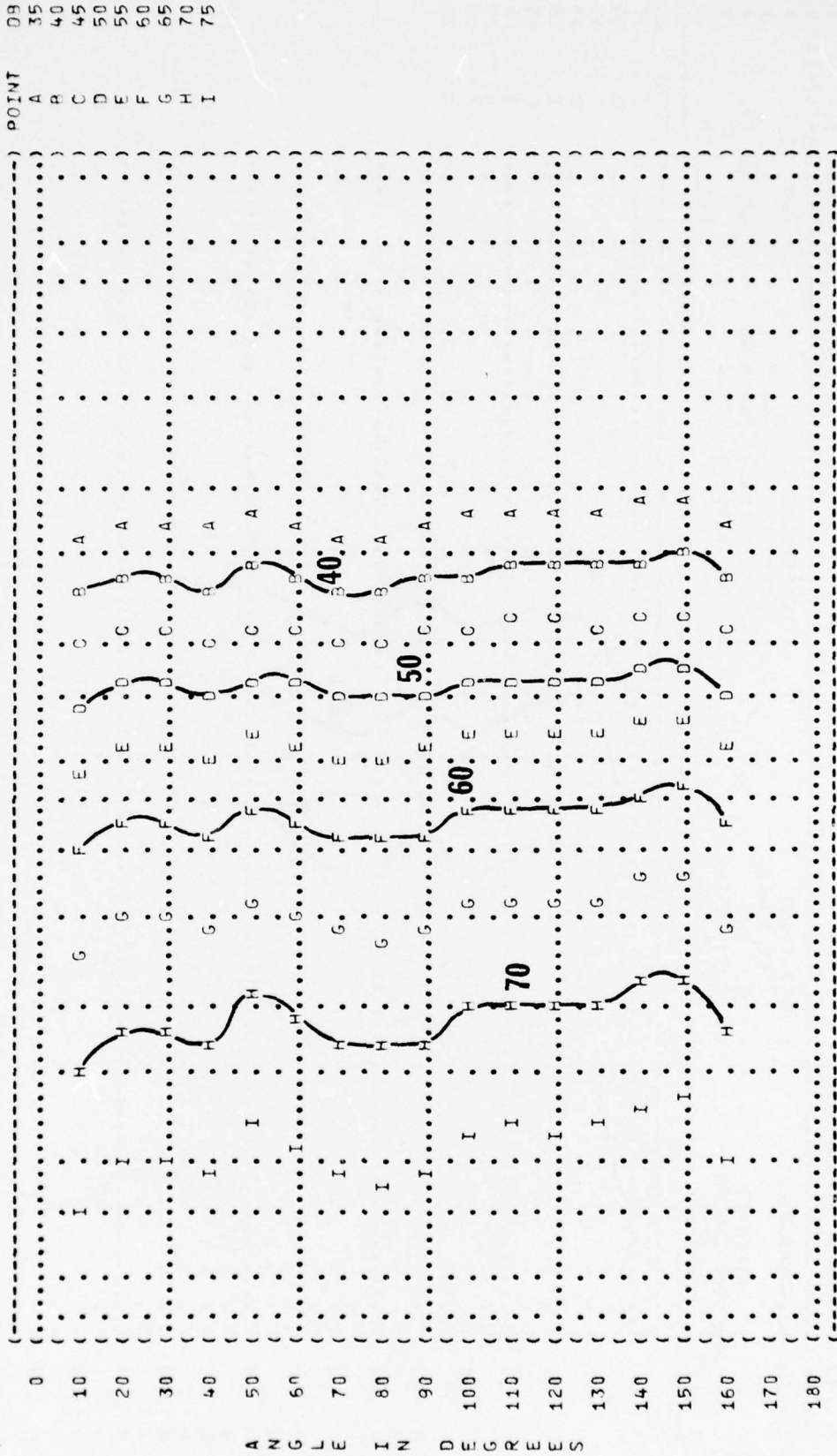
(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:
 (EQUAL TIME CONTOURS (MINUTES))
 (10 COMFIT TRIPLE FLANGE EAR PLUGS)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:
 (F-111F AIRCRAFT) AFTERBURNER POWER) TEMP = 15 C
 (TF30-P-100 ENGINE) 95% RPM) BAR PRESS = .760 M HG
 (FAR FIELD NOISE) SINGLE ENGINE) REL HUMID = 70 %
 () FREE FLOW)
 () PAGE 11)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (F-111F AIRCRAFT
 (TF30-P-100 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
 (IDLE POWER
 (65% RPM
 (BOTH ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 01
 (08 MAY 75
 (PAGE 18

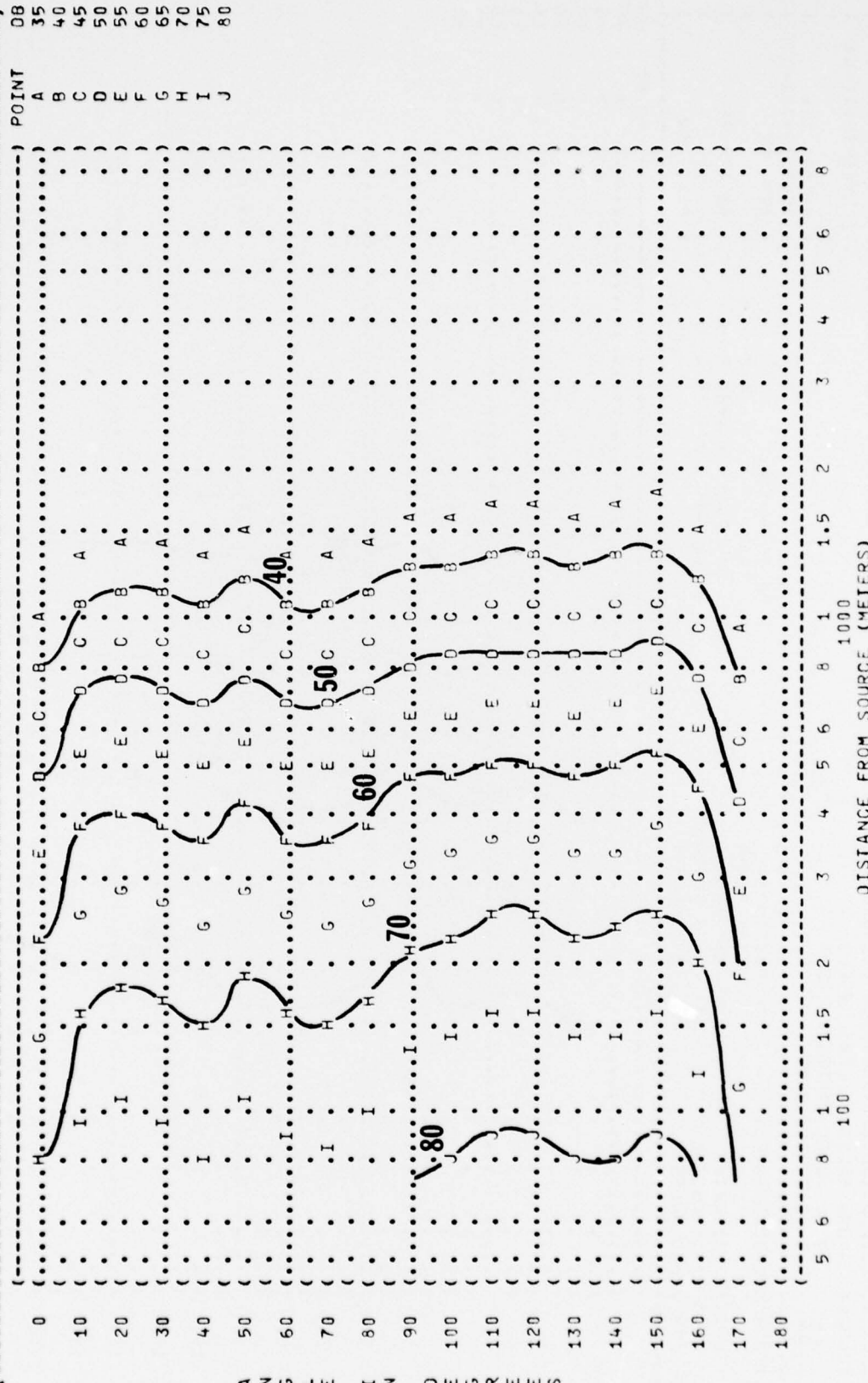


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (63 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (OPERATION:)
 (IDLE POWER)
 (65% RPM)
 (BOTH ENGINES)
 (FREE FLOW)
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-037)
 (RUN 01)
 (08 MAY 75)
 (PAGE 19)



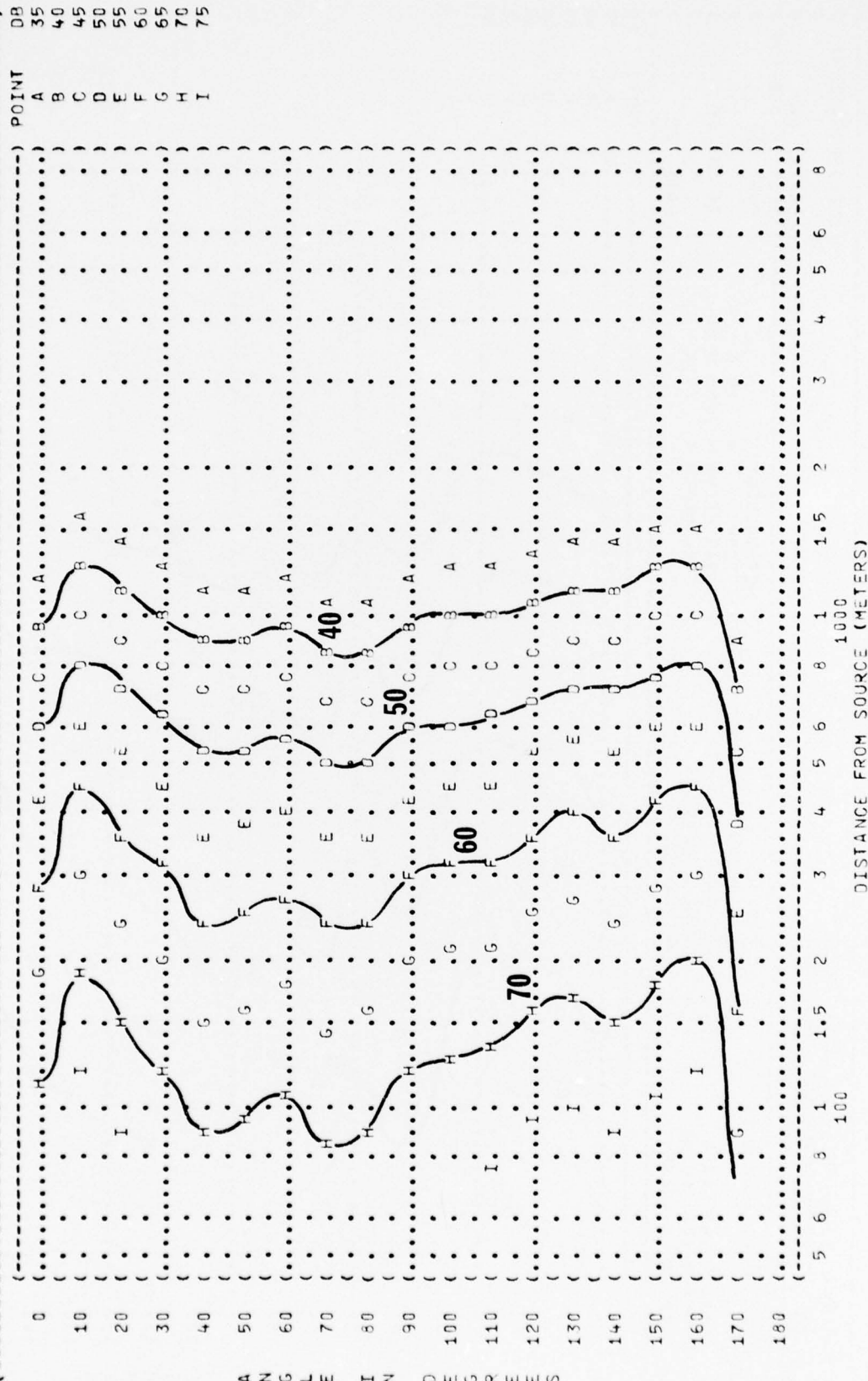
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 A N G L E I N D E G R E E S
 5 6 8 1 1.5 2 3 4 5 6 8 1000 10000
 DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (11) EQUAL LEVEL CONTOURS (DB))
 (125 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (IDLE POWER)
 (65% RPM)
 (BOTH ENGINES)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (TEST 75-002-037)
 (RUN 01)
 (08 MAY 75)
 (PAGE 20)



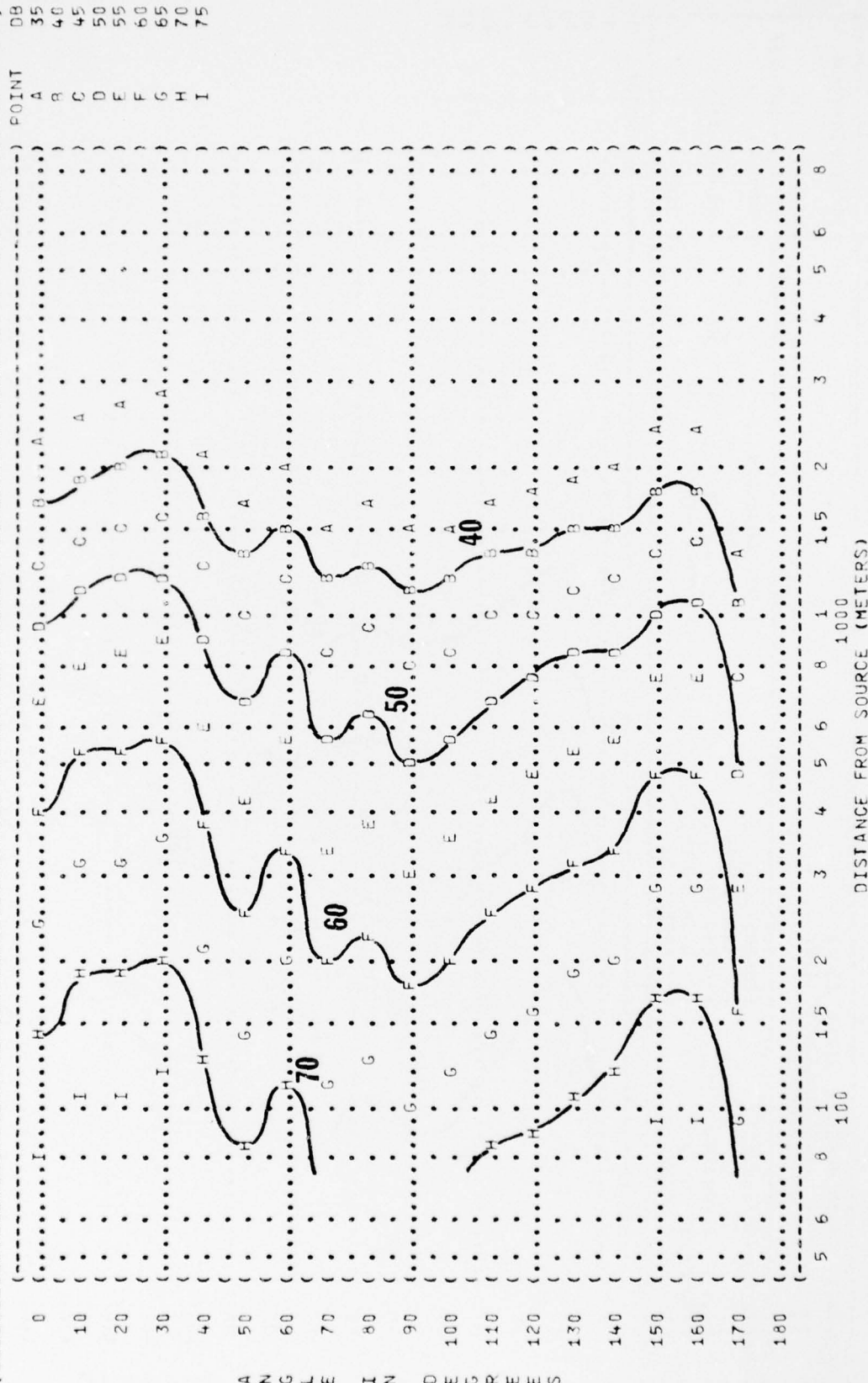
ANGLE IN DEGREES

() IDENTIFICATION: ()
 ()
 () OMEGA 1.4
 () TEST 75-002-037
 () RUN 01
 ()
 () METEOROLOGY: ()
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 ()
 () PAGE 21
 ()
 () NOISE SOURCE/SUBJECT: ()
 ()
 () OPERATION: ()
 () IDLE POWER
 () 65% RPM
 () BOTH ENGINES
 () FREE FLOW
 ()
 () F-111F AIRCRAFT
 () TF30-P-100 ENGINE
 () FAR FIELD NOISE



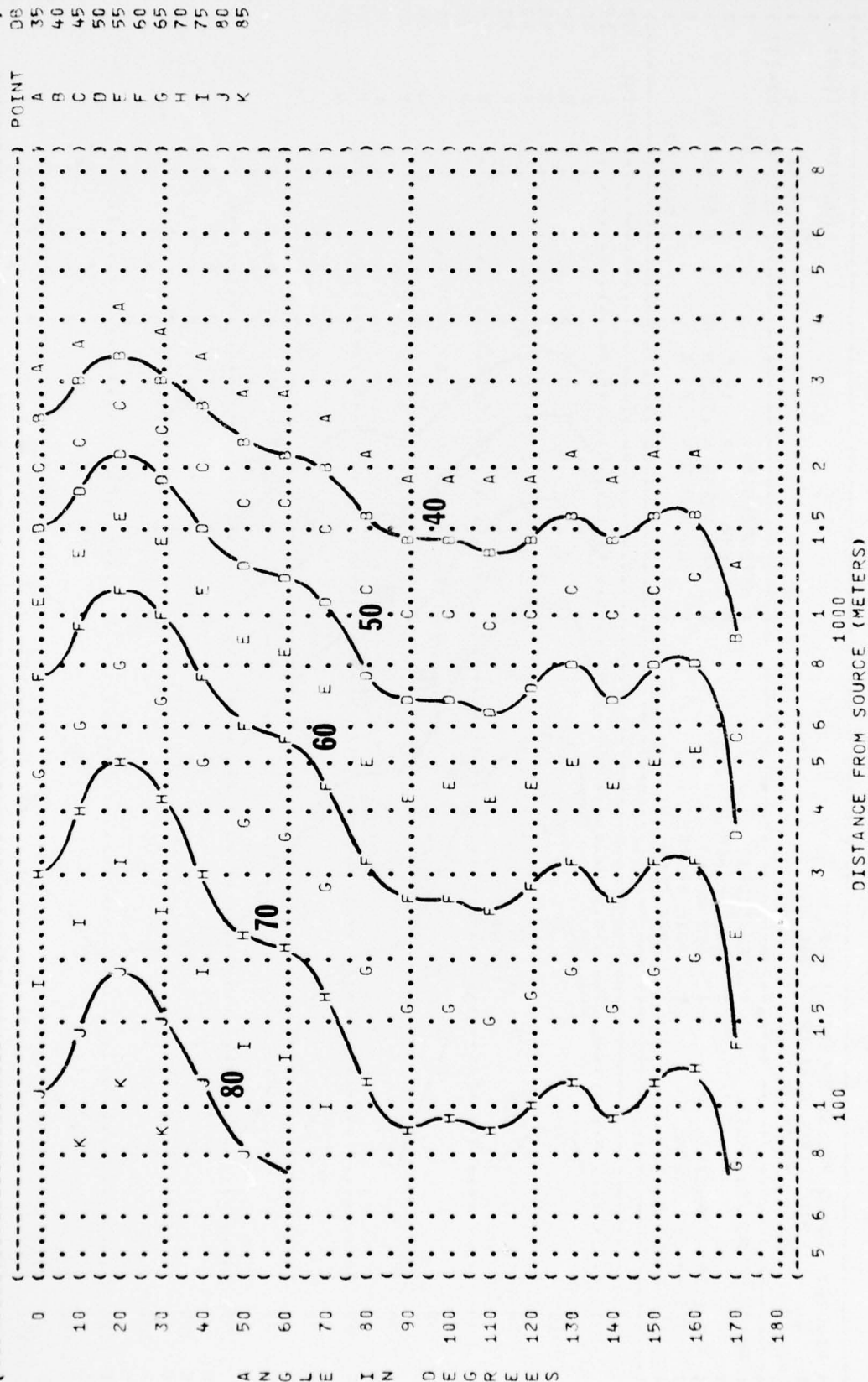
A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (500 HZ OCTAVE BAND)
 (11)
 (NOISE SOURCE/SUBJECT:)
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (IDLE POWER)
 (65% RPM)
 (BOTH ENGINES)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-037)
 (RUN 01)
 (08 MAY 75)
 (PAGE 22)

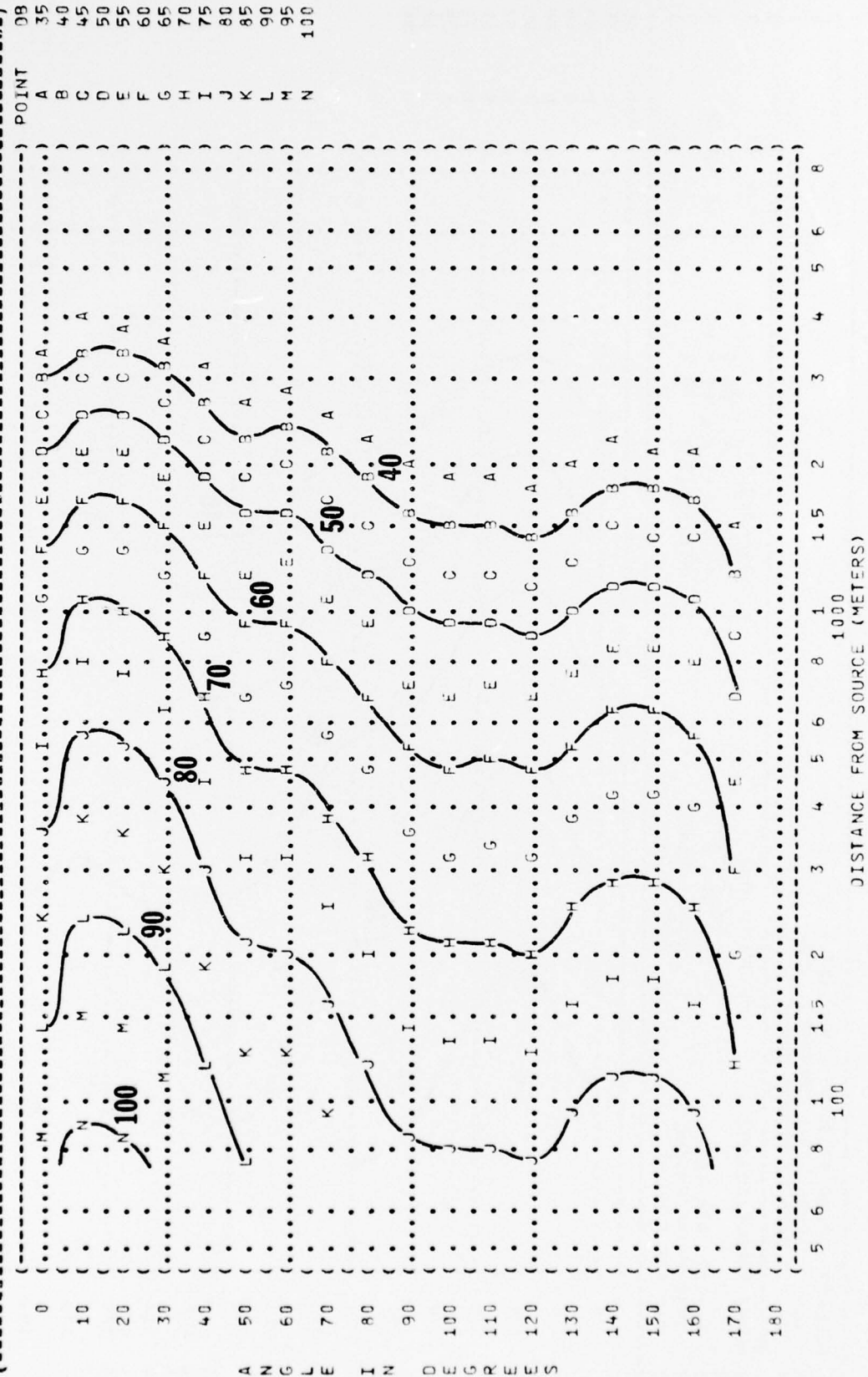


ANGLE IN DEGREES

(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (1000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (OPERATION:)
 ((IDLE POWER))
 ((65% RPM))
 ((BOTH ENGINES))
 ((FREE FLOW))
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-037)
 (RUN 01)
 (08 MAY 75)
 (PAGE 23)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (2000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (F-111F AIRCRAFT
 (IF30-P-100 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
 (IDLE POWER
 (65% RPM
 (BOTH ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 01
 (08 MAY 75
 (PAGE 24



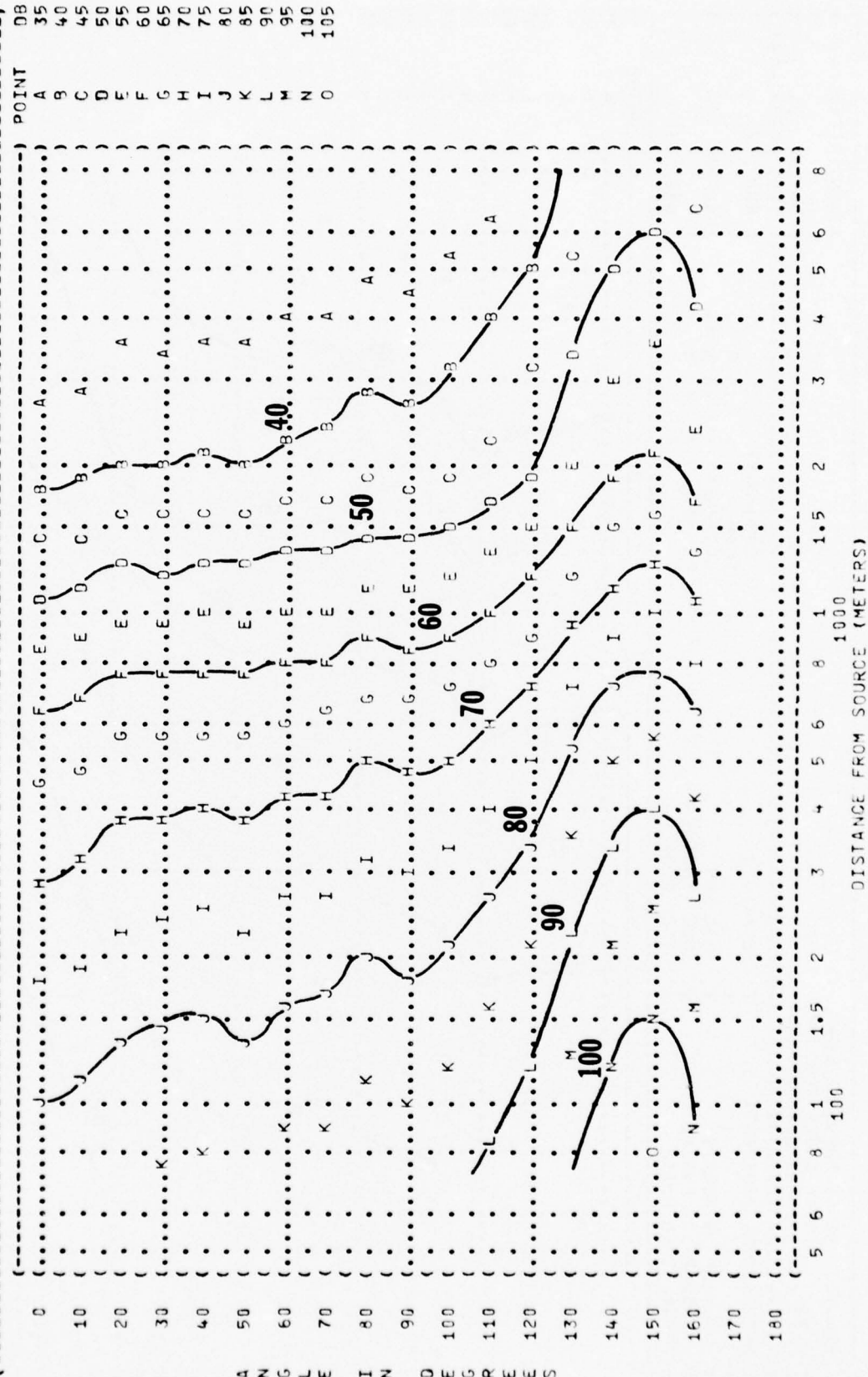
YF30-P-100 ENGI



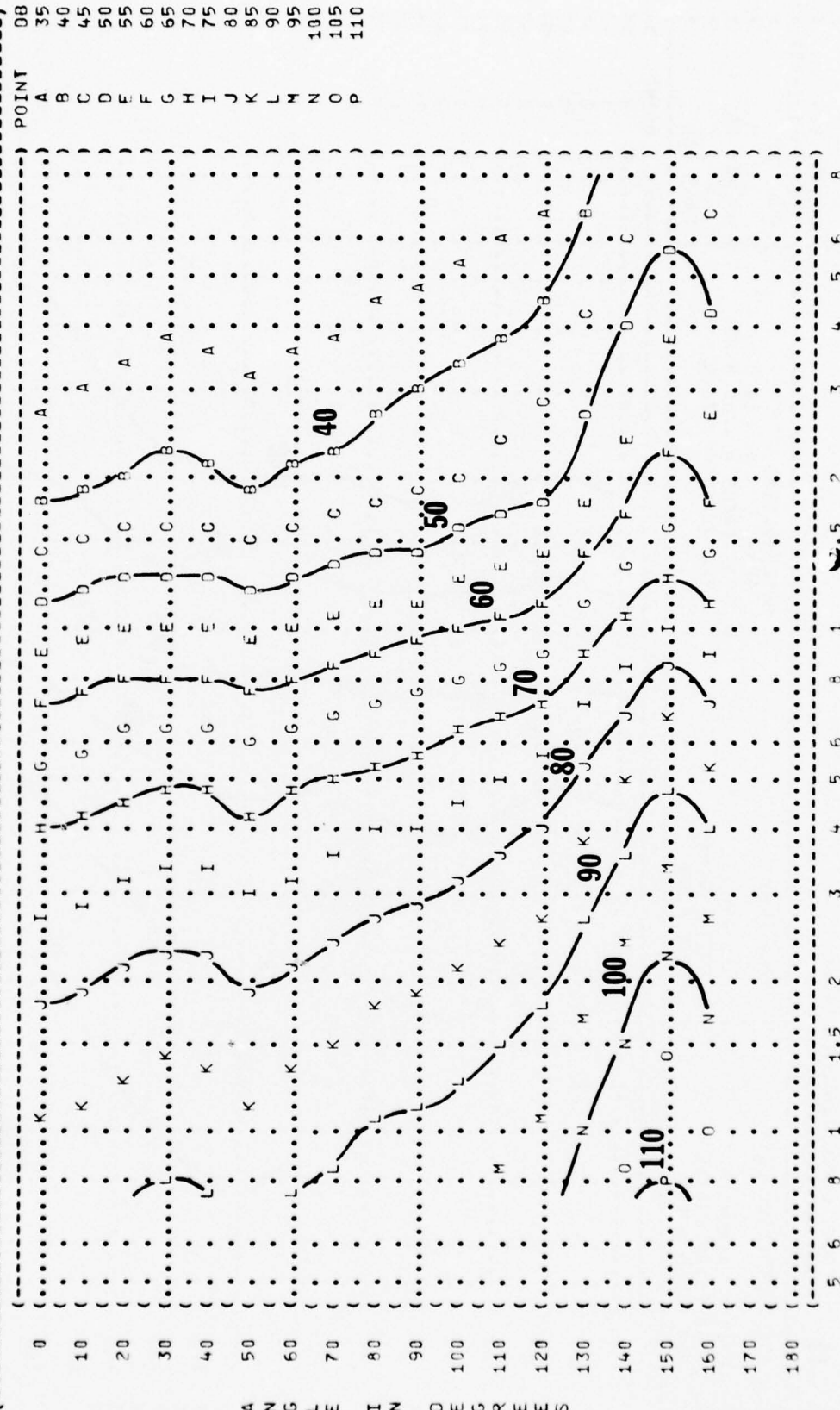
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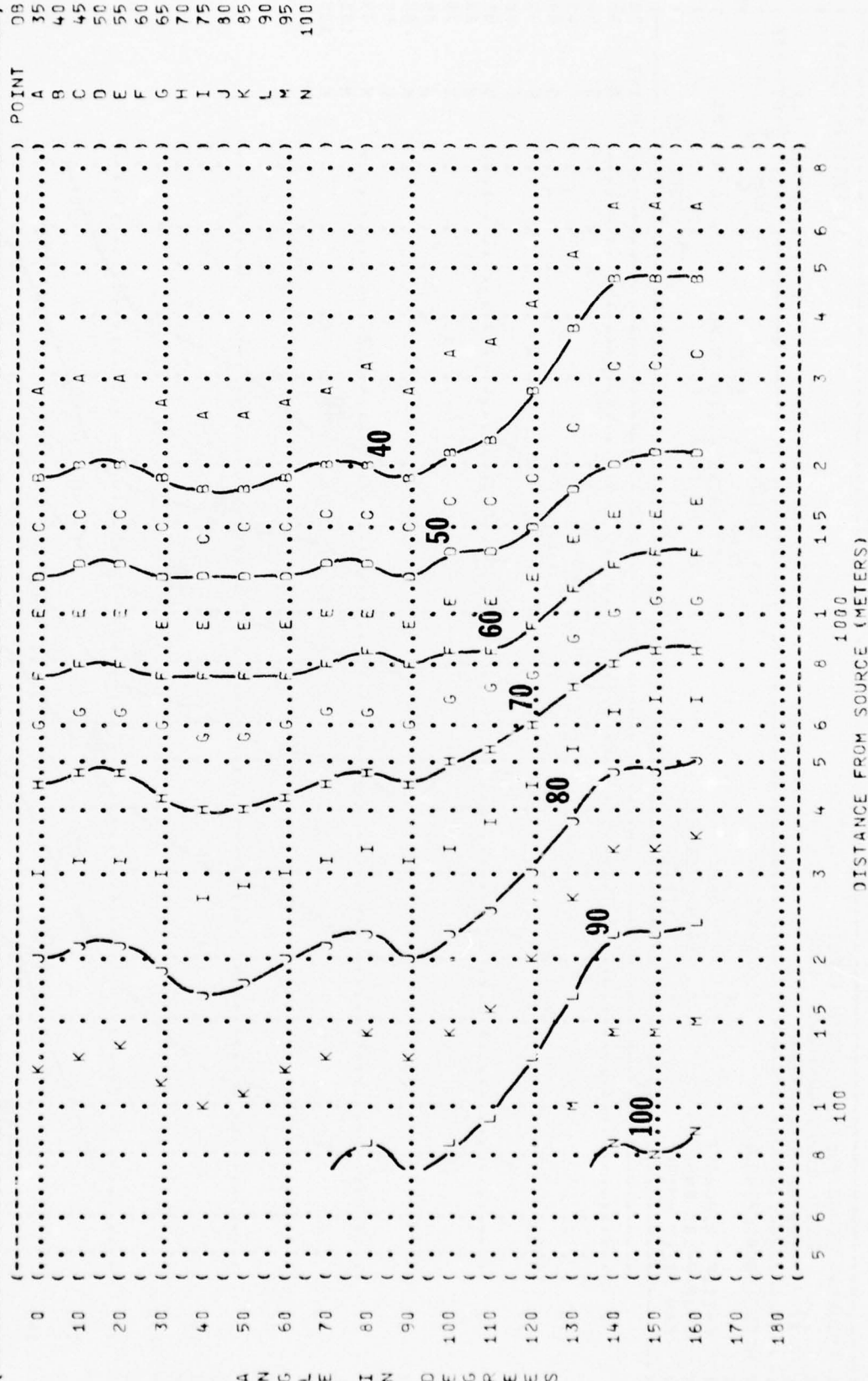
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (**11** 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (POINT DB
 (F-111F AIRCRAFT (80% RPM (TEMP = 15 C (A 35
 (TF30-P-100 ENGINE (BOTH ENGINES (BAR PRESS = .760 M HG (B 40
 (FAR FIELD NOISE (FREE FLOW (REL HUMID = 70 % (C 45
 (((((((((D 50
 ((((((((((((((E 55
 ((((((((((((((F 60
 ((((((((((((((G 65
 ((((((((((((((H 70
 ((((((((((((((I 75
 ((((((((((((((J 80
 ((((((((((((((K 85
 ((((((((((((((L 90
 ((((((((((((((M 95
 ((((((((((((((N 100
 ((((((((((((((O 105



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 ((OPERATION:
 ((80% RPM
 ((BOTH ENGINES
 ((FREE FLOW
 (F-111F AIRCRAFT
 (TF30-P-100 ENGINE
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (RUN 02
 (08 MAY 75
 (PAGE 20
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (

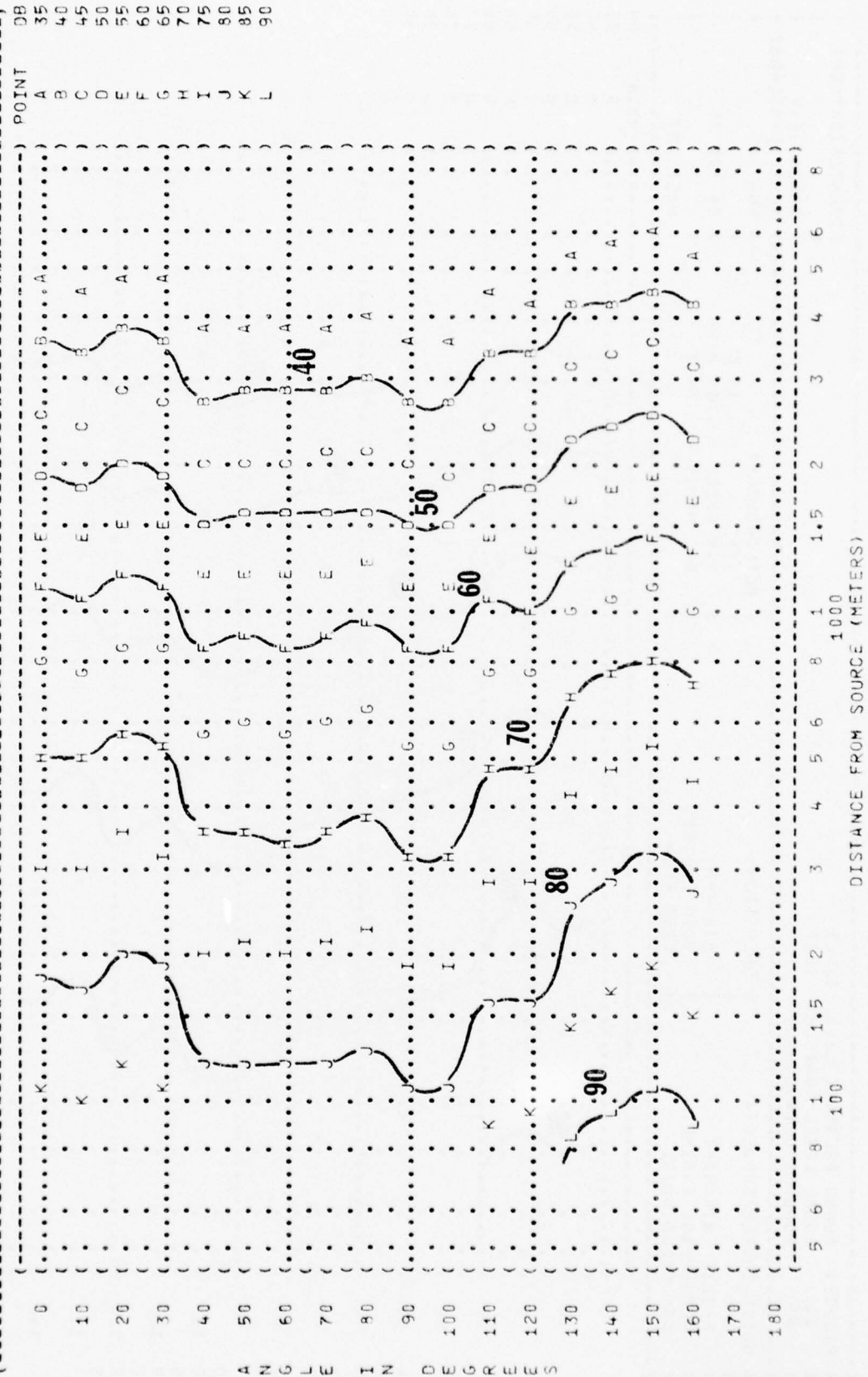


((FIGURE: SOUND PRESSURE LEVEL (SPL)
 ((EQUAL LEVEL CONTOURS (DB)
 ((**11** 250 HZ OCTAVE BAND
 ((NOISE SOURCE/SUBJECT: (OPERATION:
 ((F-111F AIRCRAFT (80% RPM
 ((TF30-P-100 ENGINE (BOTH ENGINES
 ((FAR FIELD NOISE (FREE FLOW
 ((METEOROLOGY: (TEMP = 15 C
 ((BAR PRESS = .760 M HG
 ((REL HUMID = 70 %
 ((IDENTIFICATION: (OMEGA 1.4
 ((TEST 75-002-037
 ((RUN 02
 ((PAGE 21

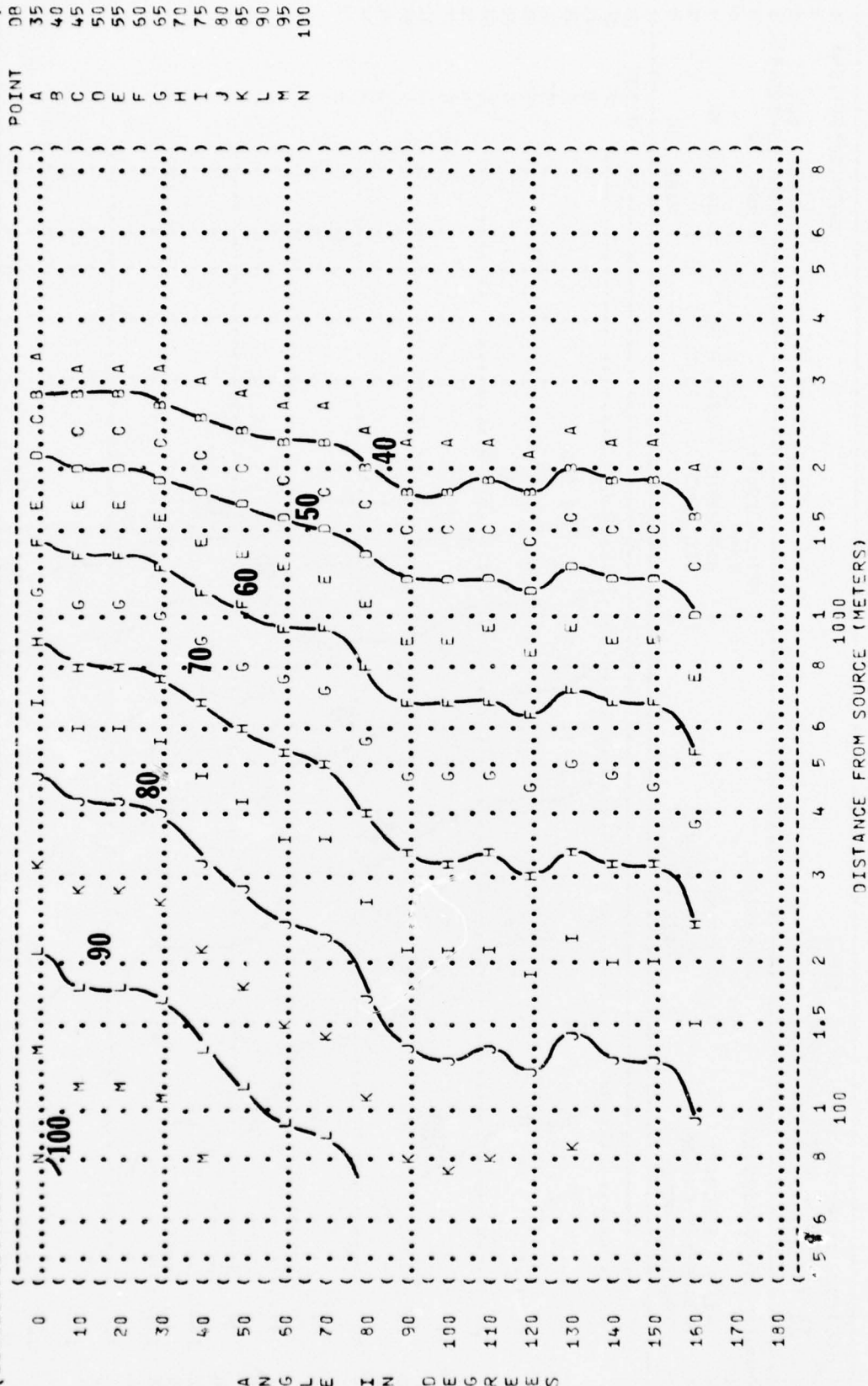


ANGLE IN DEGREES

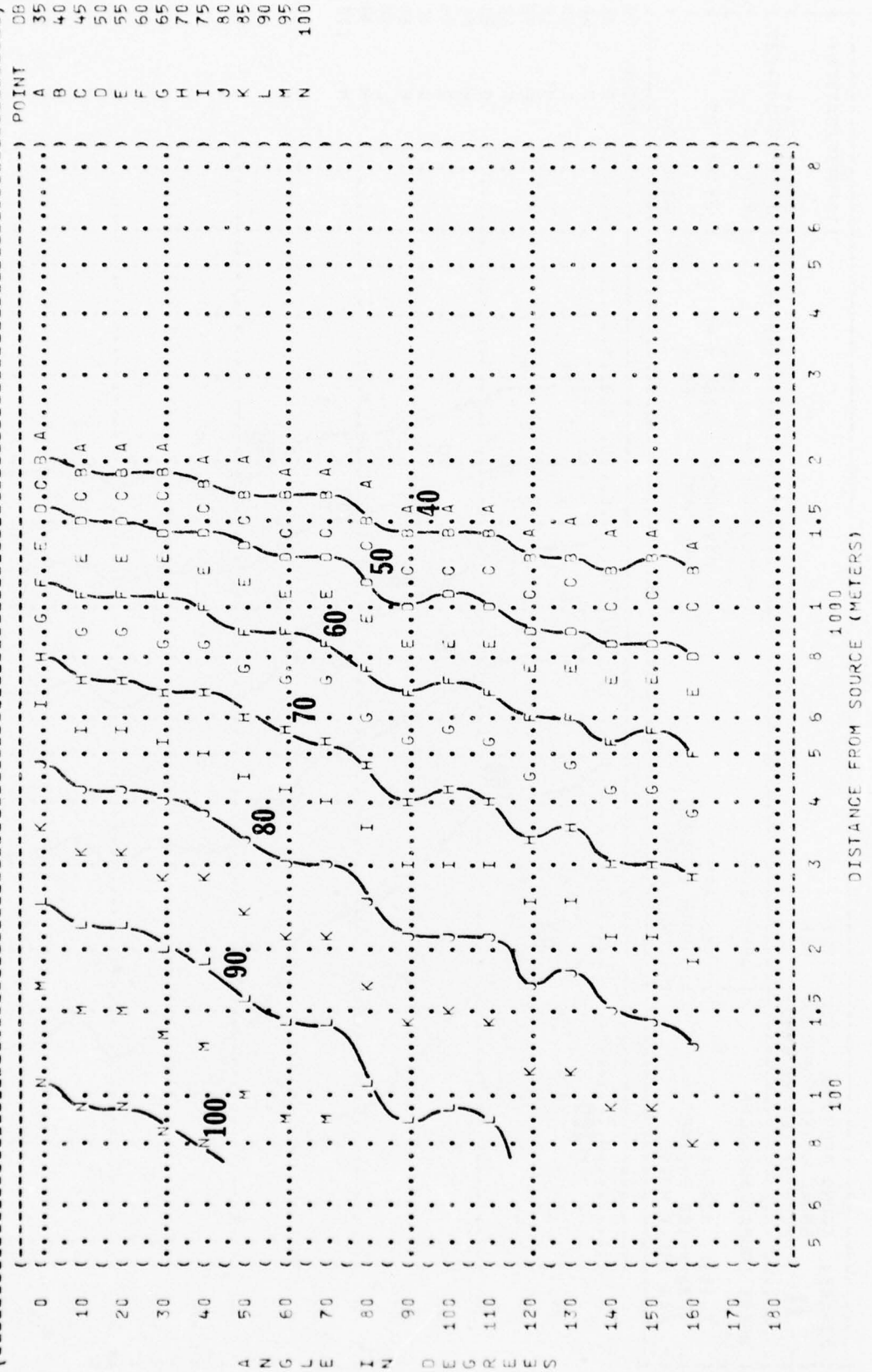
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 500 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (80% RPM
 (TF30-P-100 ENGINE (BOTH ENGINES
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 02
 (08 MAY 75
 (PAGE 22



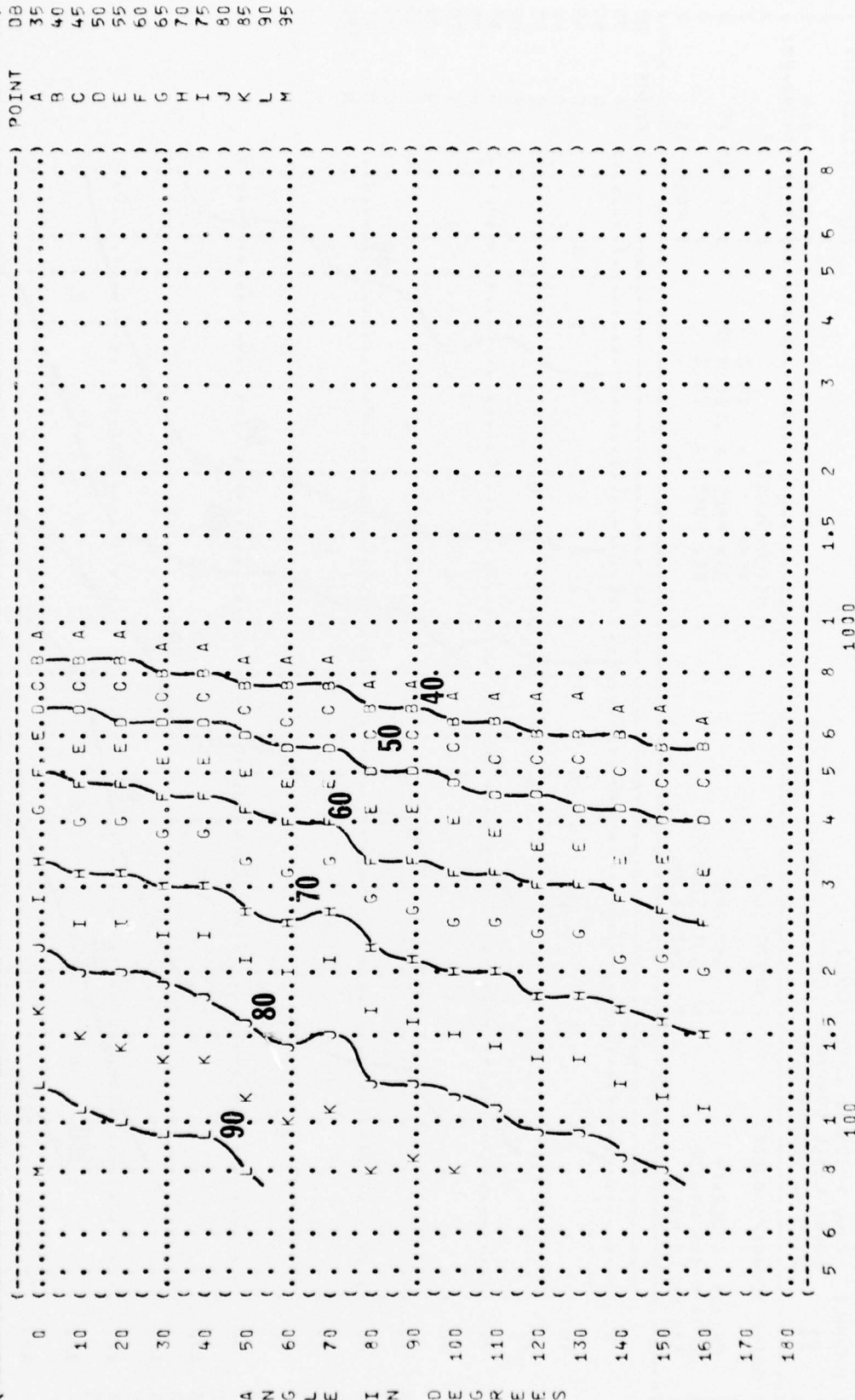

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(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4 )
( 2000 HZ OCTAVE BAND ) TEST 75-002-037 )
( NOISE SOURCE/SUBJECT: ) RUN 02 )
( OPERATION: ) METEOROLOGY: )
( TEMP = 15 C )
( 80% RPM ) BAR PRESS = .760 M HG )
( 90TH ENGINES ) REL HUMID = 70 % )
( FREE FLOW ) PAGE 24 )
(-----)
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(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (11 4000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (OPERATION:)
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-037)
 (RUN 02)
 (08 MAY 75)
 (PAGE 25)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (80% RPM
 (TF30-P-100 ENGINE (BOTH ENGINES
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY: = 15 C
 (TEMP = .760 M HG
 (BAR PRESS = 70 %
 (REL HUMID =
 (PAGE 26
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 02
 (08 MAY 75
 (POINT DB



DISTANCE FROM SOURCE (METERS)

A N G L E I N D E G R E E S

NOISE SOURCE/SUBJECT:

F-111F AIRCRAFT
TF30-P-100 ENGINE
FAR FIELD NOISE

(OPERATION:
(
(85% RPM
(BOTH ENG
(FREE FLO

METEOROLOGY:
TEMP
BAR PRESS
REL HUMID

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-037
RUN 03



IDENTIFICATION:
OMEGA 1.4

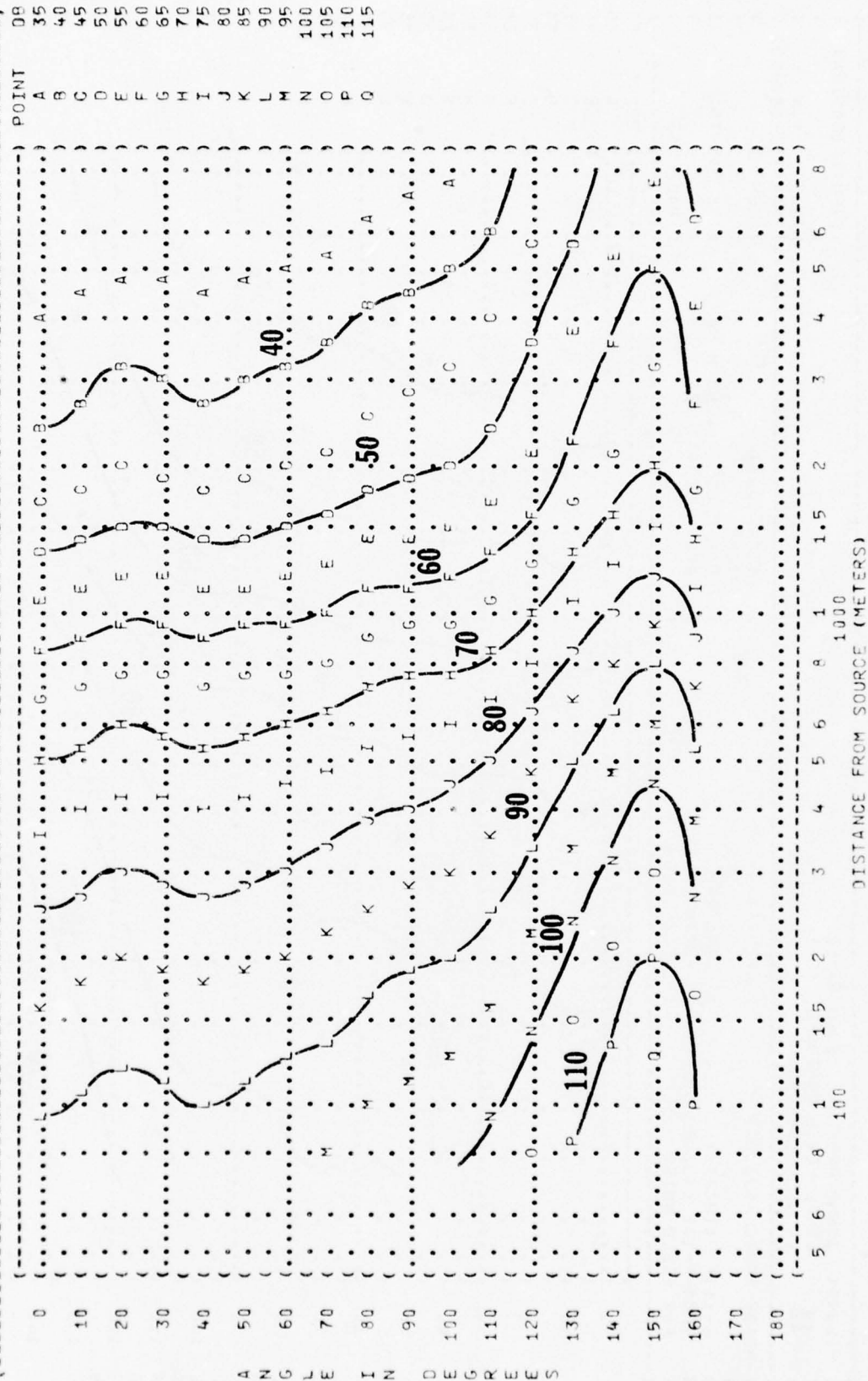
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(OPERATION:
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(85% RPM
(BOTH ENG
(FREE FLO

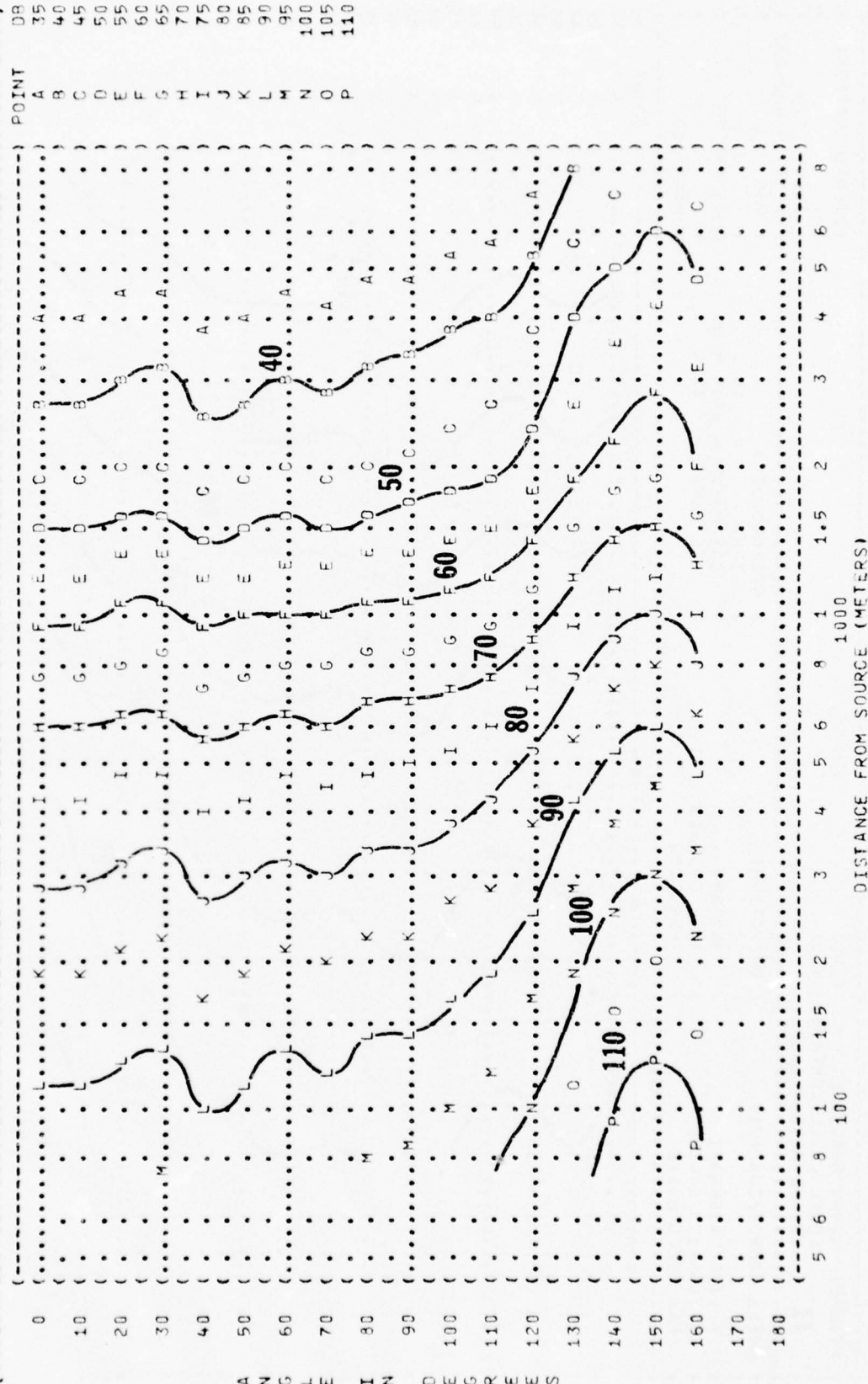
METEOROLOGY:
TEMP
BAR PRESS
REL HUMID

08 MAY 75
PAGE 19

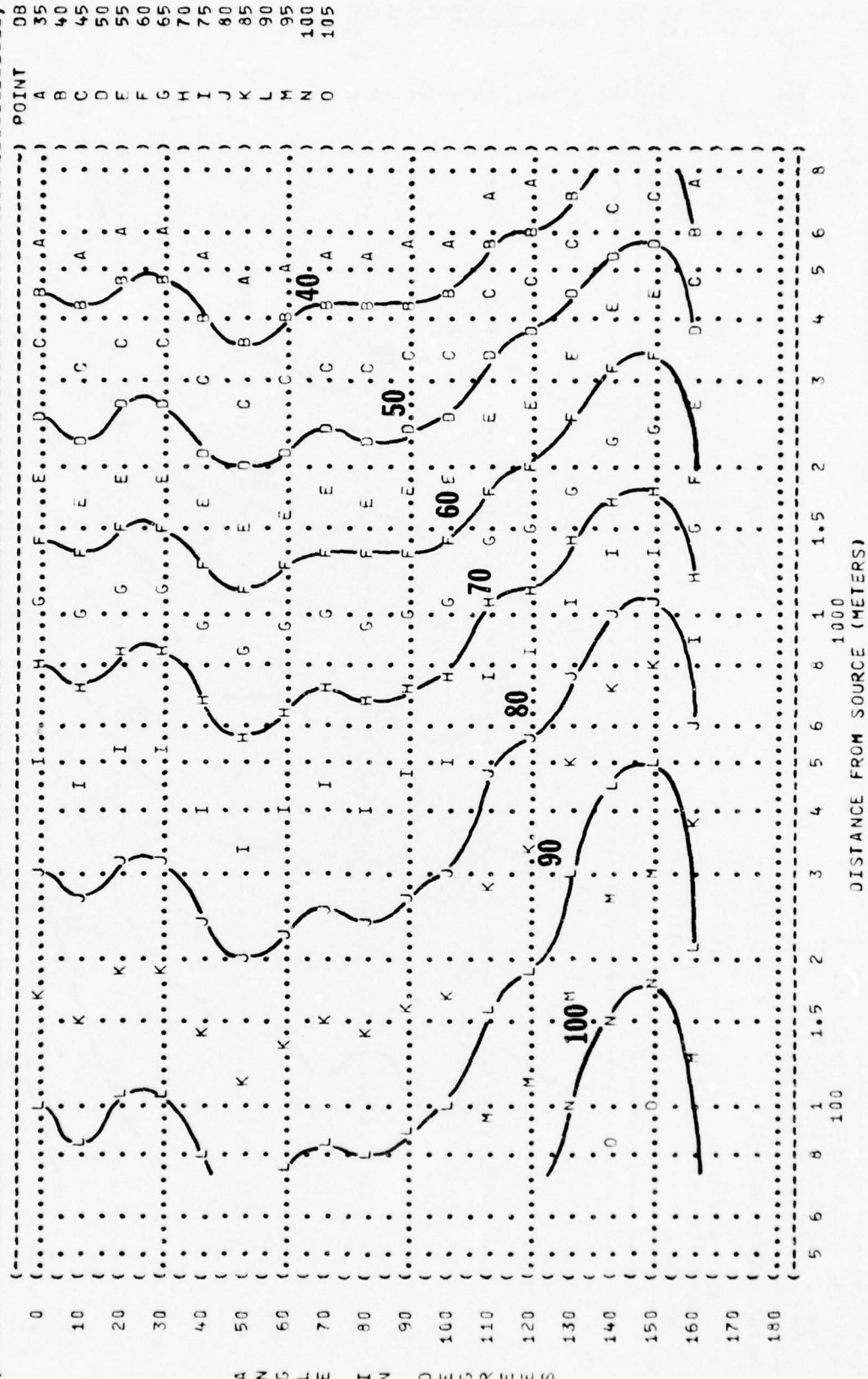


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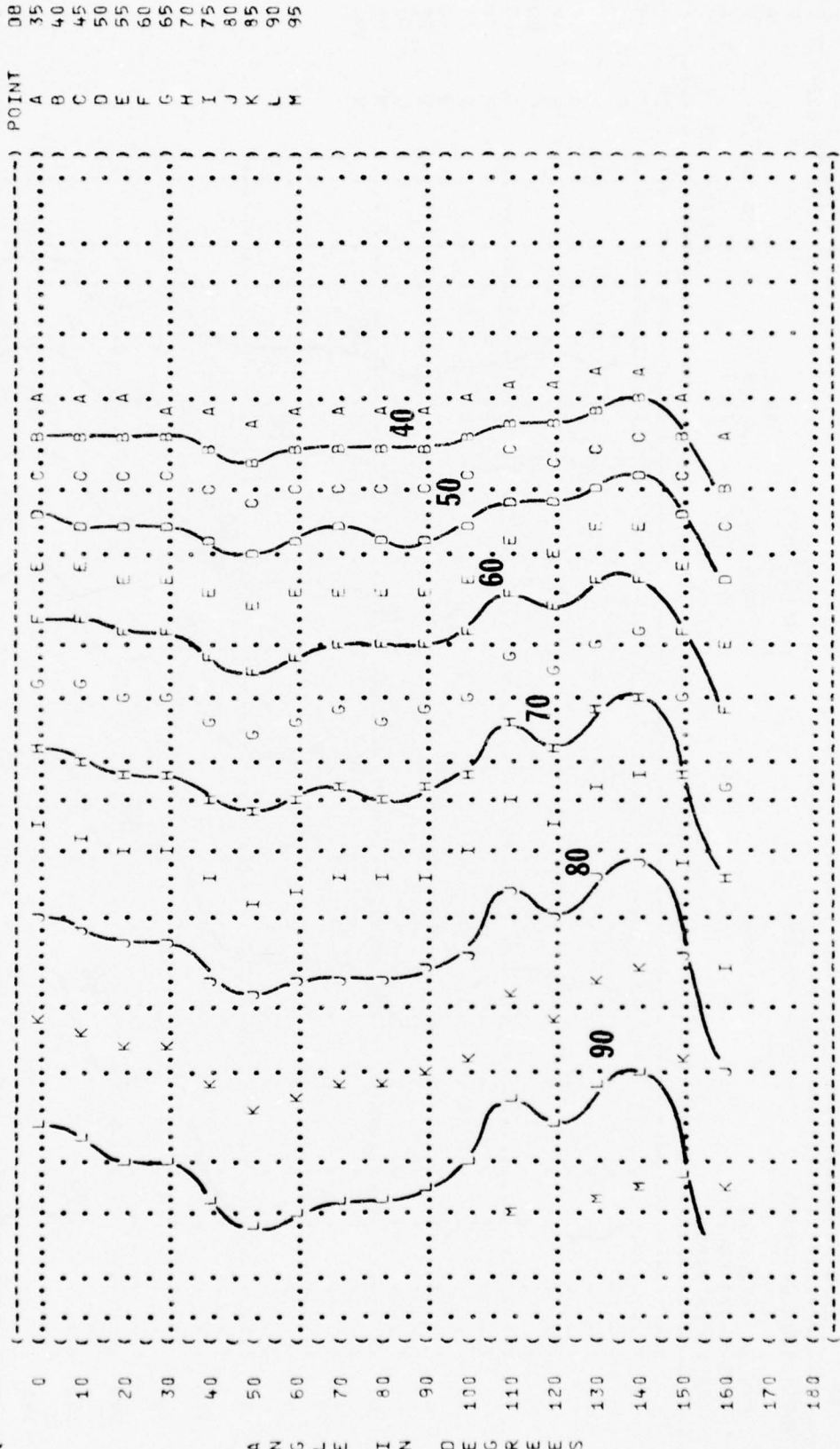
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (85% RPM
 (TF30-P-100 ENGINE (90TH ENGINES
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION: (OMEGA 1.4
 (TEST 75-002-037
 (RUN 03
 (08 MAY 75
 (PAGE 21



((FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 ((11 EQUAL LEVEL CONTOURS (DB)))
 ((500 HZ OCTAVE BAND))
 ((NOISE SOURCE/SUBJECT:))
 ((F-111F AIRCRAFT))
 ((TF30-P-100 ENGINE))
 ((FAR FIELD NOISE))
 ((OPERATION:))
 ((85% RPM))
 ((30TH ENGINES))
 ((FREE FLOW))
 ((METEOROLOGY:))
 ((TEMP = 15 C))
 ((BAR PRESS = .760 M HG))
 ((REL HUMID = 70 %))
 ((OMEGA 1.4))
 ((TEST 75-002-037))
 ((RUN 03))
 ((08 MAY 75))
 ((PAGE 22))

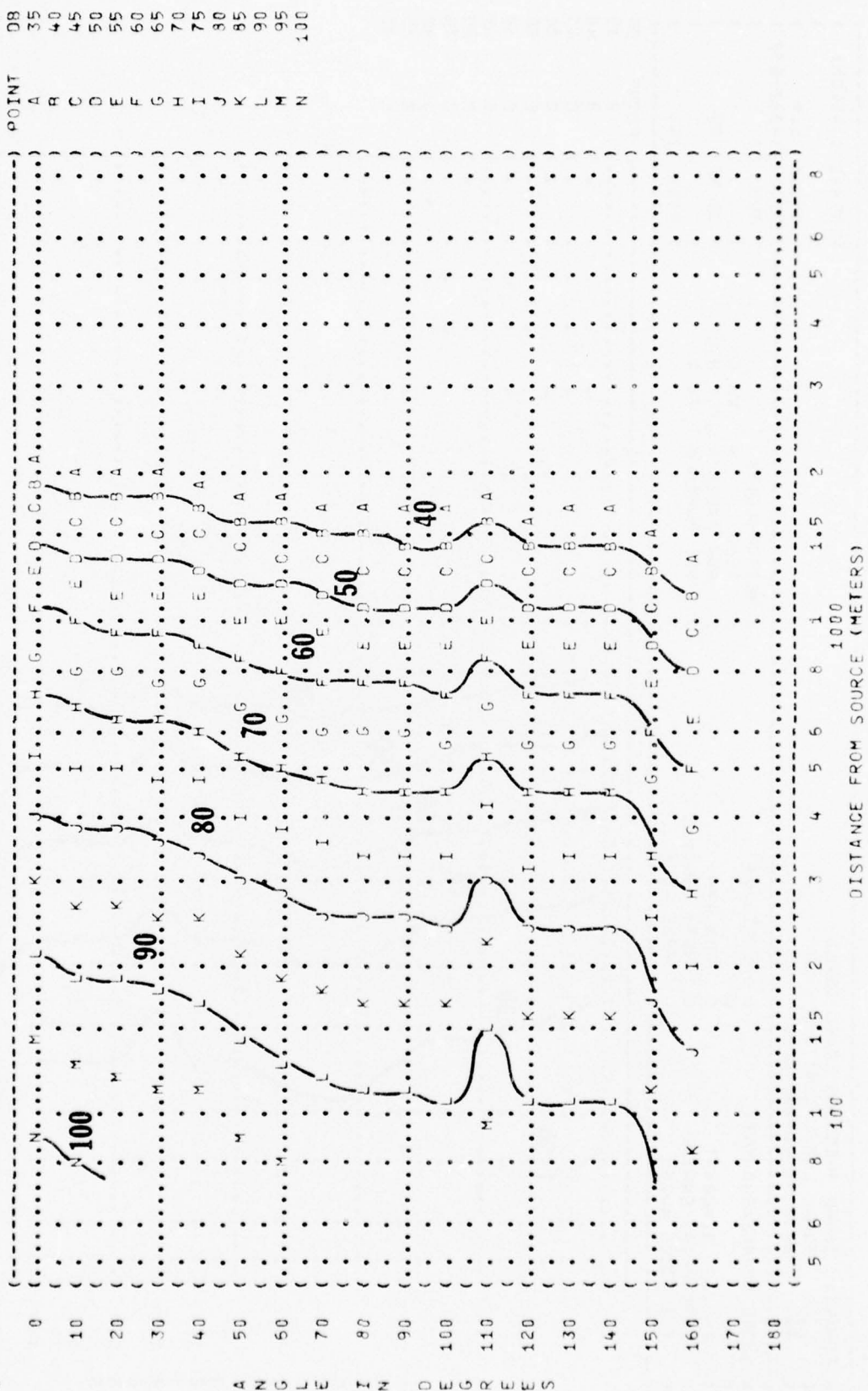


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (**11** 2000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
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 (TF30-P-100 ENGINE (BOTH ENGINES
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (RUN 03
 (08 MAY 75
 (PAGE 24
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (

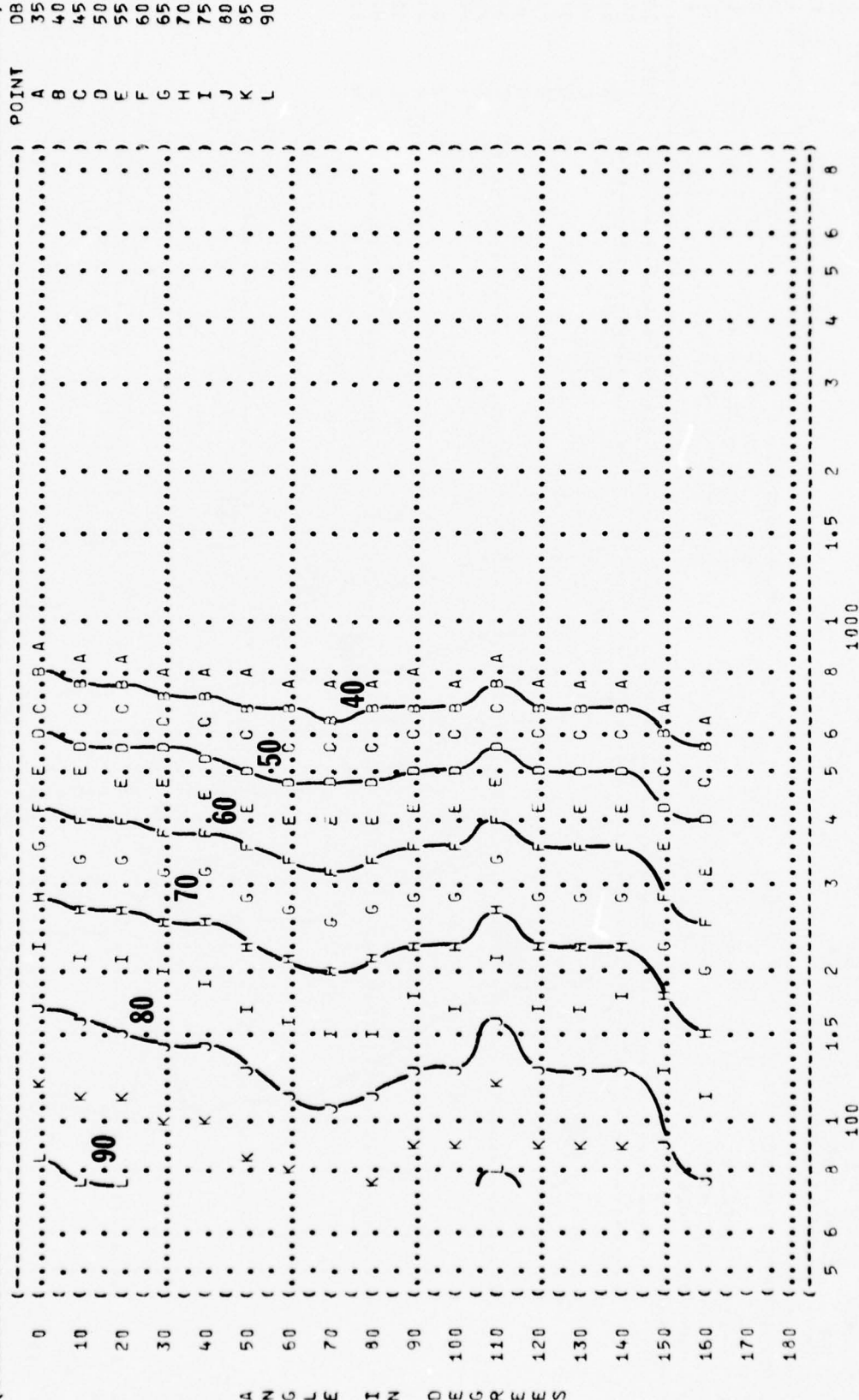


DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (85% RPM
 (TF30-P-100 ENGINE (BOTH ENGINES
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 03
 (08 MAY 75
 (PAGE 25

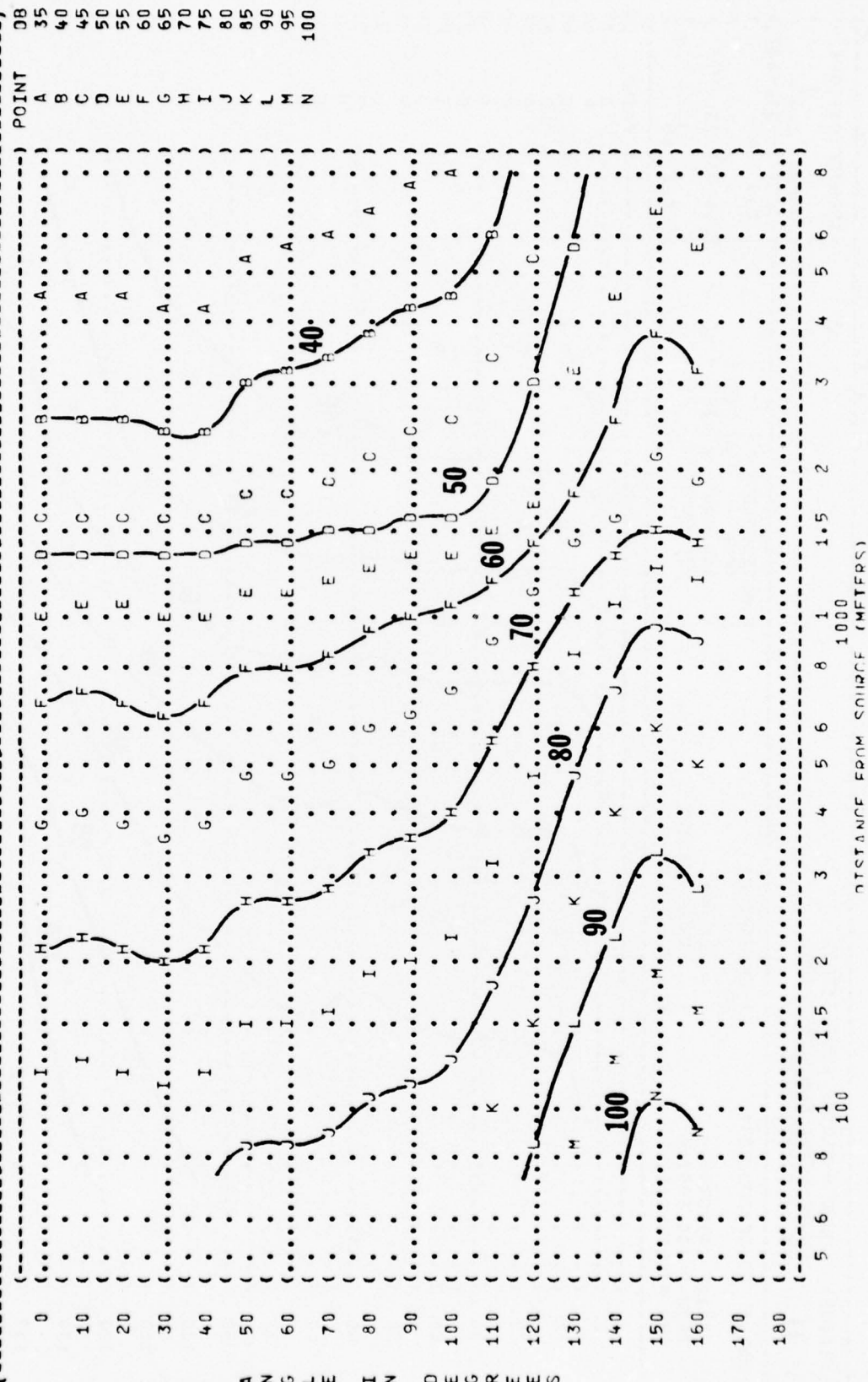


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (**11** 8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (85% RPM
 (TF30-P-100 ENGINE (BOTH ENGINES
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 03
 (08 MAY 75
 (PAGE 26



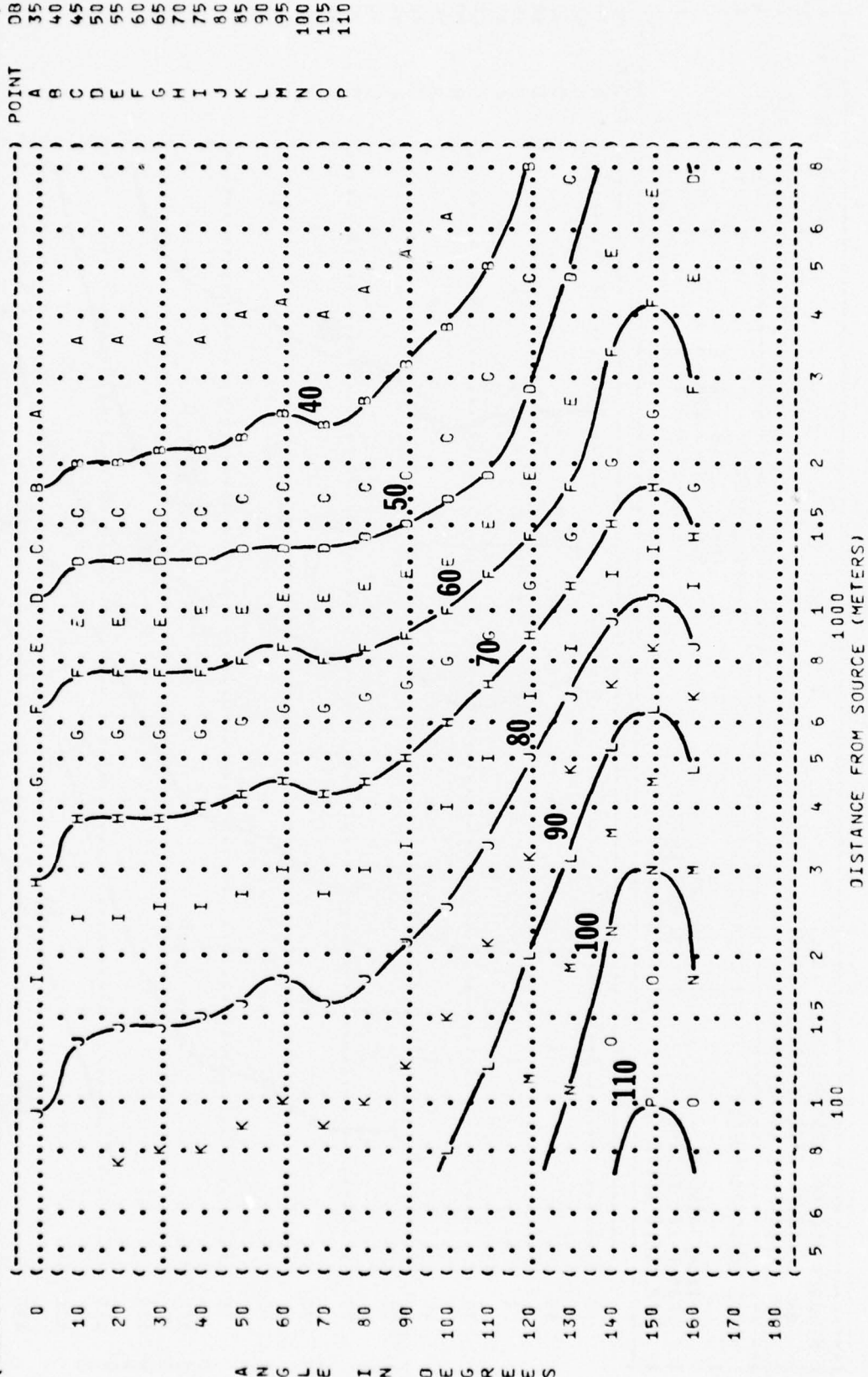
A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (11 EQUAL LEVEL CONTOURS (DB)))
 (31.5 HZ OCTAVE BAND))
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 (F-111F AIRCRAFT) (85% RPM) TEMP = 15 C)
 (TF30-P-100 ENGINE) (SINGLE ENGINE) BAR PRESS = .760 M HG)
 (FAR FIELD NOISE) (FREE FLOW) REL HUMID = 70 %)
 () () RUN 04)
 () () 08 MAY 75)
 () () PAGE 18)

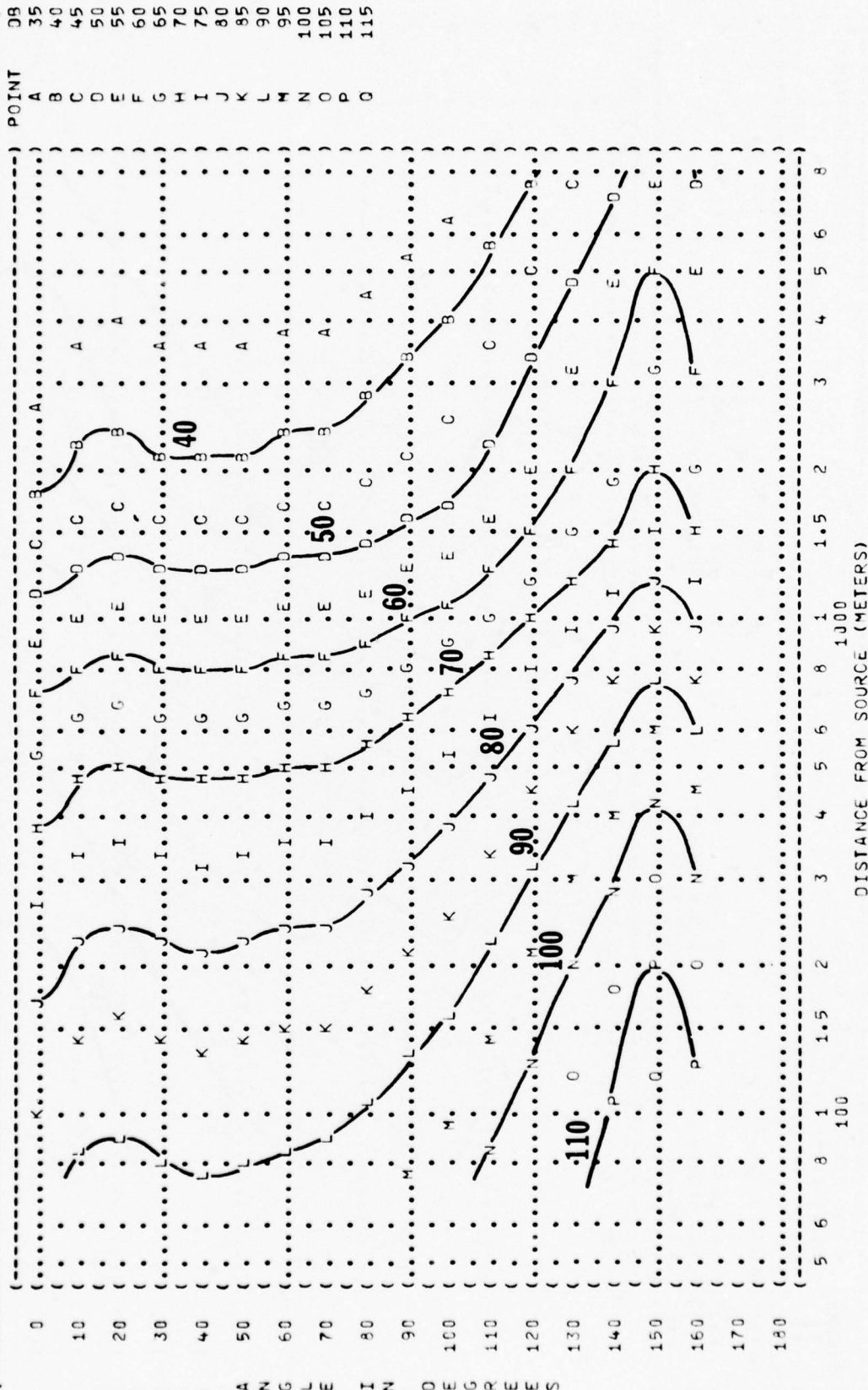


A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (95% RPM
 (TF30-P-100 ENGINE (SINGLE ENGINE
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 04
 (08 MAY 75
 (PAGE 19



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (85% RPM
 (TF30-P-100 ENGINE (SINGLE ENGINE
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 04
 (08 MAY 75
 (PAGE 20



(FIGURE: SOUND PRESSURE LEVEL {SPL}
 (EQUAL LEVEL CONTOURS (DB)
 250 HZ OCTAVE BAND
11
 IDENTIFICATION:
)
) OMEGA 1.4

11

(-----) TEST 75-002-037)

(NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:) RUN 04

(F-111F AIRCRAFT) (85% RPM) (TEMP = 15 C)
(BAR PRESS = .760 M HG) (08 MAY 75)

(TF30-P-100 ENGINE)
(SINGLE ENGINE)
(REL HUMID = 70 %)

((FAR FIELD NOISE (FREE FLOW)) PAGE 21

(-----) POINT

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30 (.....L.....K.....J.....I.....H.....G.....F.....E.....D.....C.....B.....A.....) 6
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60 (.....L.....K.....J.....I.....H.....G.....F.....E.....D.....C.....B.....A.....) 95

Figure 6 shows the results of the analysis of variance for the effect of treatment on the growth rate of the fish. The growth rate was significantly higher in the control group than in the treated groups ($p < 0.05$). The growth rate was also significantly higher in the control group than in the treated groups ($p < 0.05$).

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[illegible]

0.50

30 (.....) A.
30 (.....) B.
30 (.....) C.
30 (.....) D.
30 (.....) E.
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30 (.....) G.
30 (.....) H.
30 (.....) I.
30 (.....) J.
30 (.....) K.
30 (.....) L.
30 (.....) M.
30 (.....) N.
30 (.....) O.
30 (.....) P.
30 (.....) Q.
30 (.....) R.
30 (.....) S.
30 (.....) T.
30 (.....) U.
30 (.....) V.
30 (.....) W.
30 (.....) X.
30 (.....) Y.
30 (.....) Z.

E 100 (. . . M . . L . . X . . J . . I . . H . . G . . F . . E . . D . . C . . B . . A . .)

70

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 B. $\frac{1}{3}$
 C. $\frac{1}{4}$
 D. $\frac{1}{5}$
 E. $\frac{1}{6}$
 F. $\frac{1}{7}$
 G. $\frac{1}{8}$
 H. $\frac{1}{9}$
 I. $\frac{1}{10}$
 J. $\frac{1}{11}$
 K. $\frac{1}{12}$
 L. $\frac{1}{13}$
 M. $\frac{1}{14}$
 N. $\frac{1}{15}$
 O. $\frac{1}{16}$
 P. $\frac{1}{17}$
 Q. $\frac{1}{18}$
 R. $\frac{1}{19}$
 S. $\frac{1}{20}$
 T. $\frac{1}{21}$
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 HM. <

E 120 (.....N.....M.....L.....K.....J.....I.....H.....G.....F.....E.....D.....C.....B.....A.....)

100.
110.

130 110 001

140 (. . . P . . . O . . . N . . . M . . . L . . . K . . . J . . . I . . . H . . . G . . . F . . . E . . . D . . . C . .)

[illegible]

130P.....U.....N.....M.....L.....K.....J.....I.....H.....G.....F.....E.....D.....C.....
(.....).....(.....).....(.....)

160 (. . . P . . O . . N . . M . . L . . K . . J . . I . . H . . G . . F . . E . . D . . C . .)

.....

10

130 (.....)

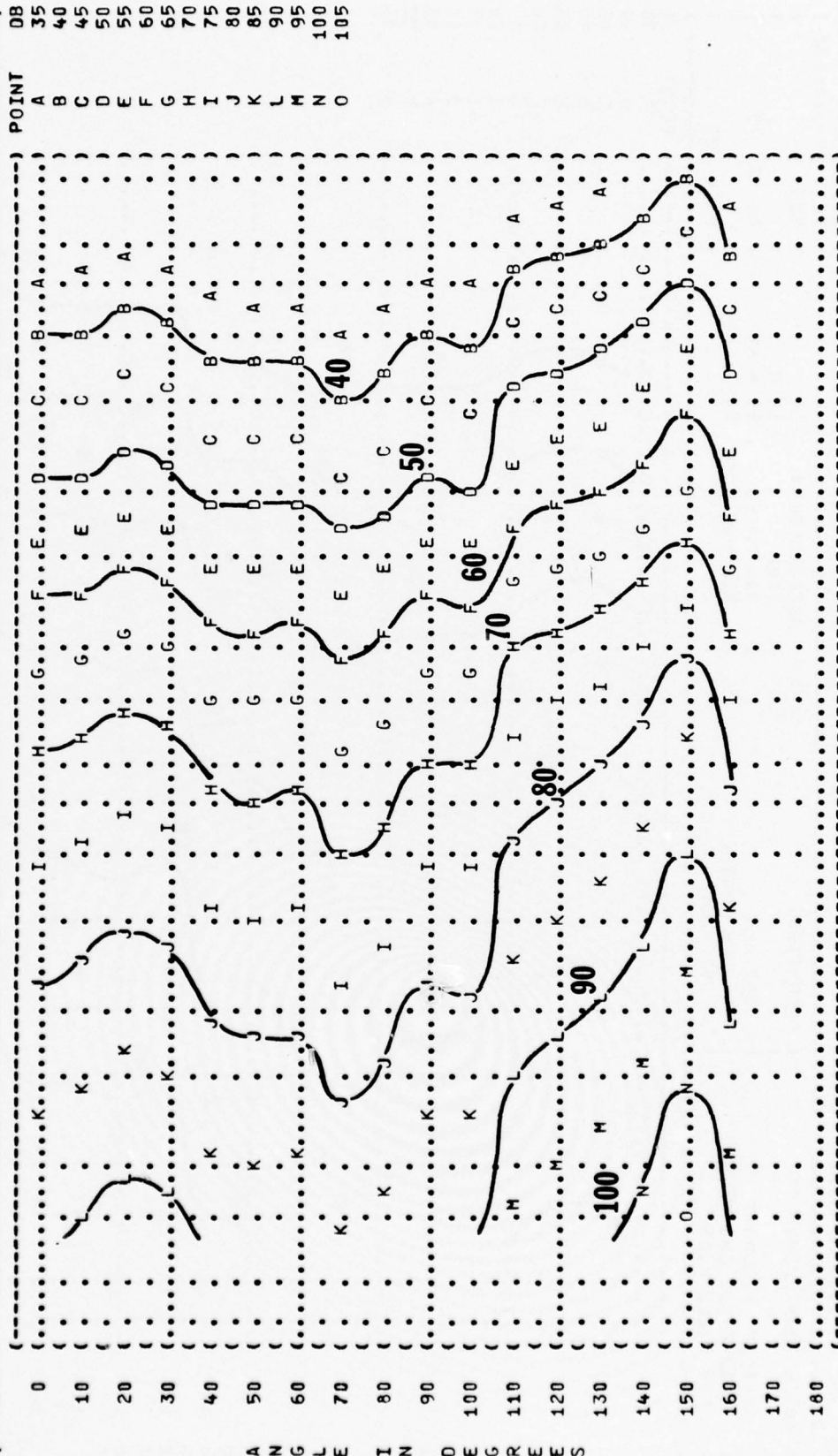
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DISTANCE FROM SOURCE (METERS)

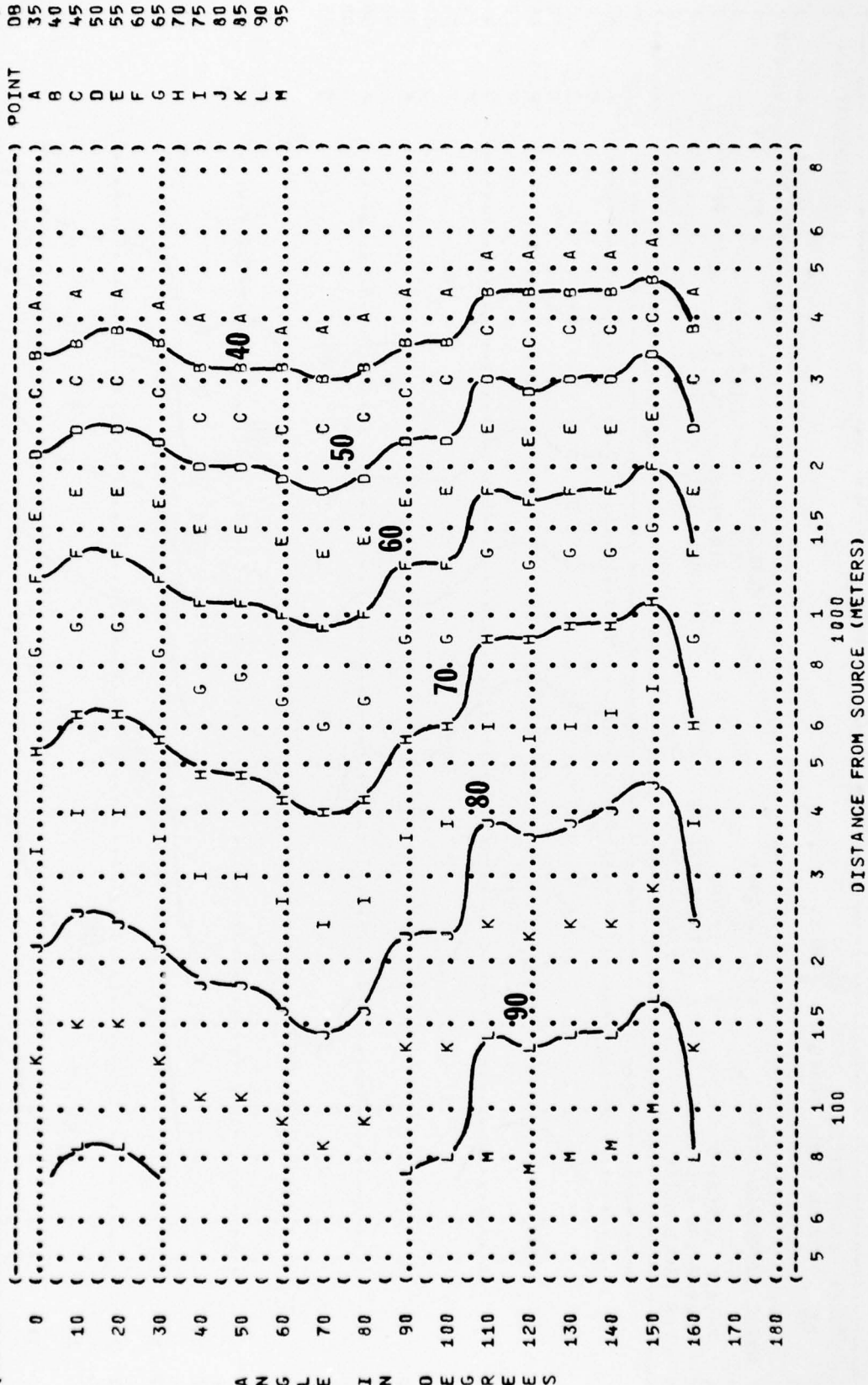
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(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 500 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (85% RPM
 (TF30-P-100 ENGINE (SINGLE ENGINE
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 04
 (08 MAY 75
 (PAGE 22

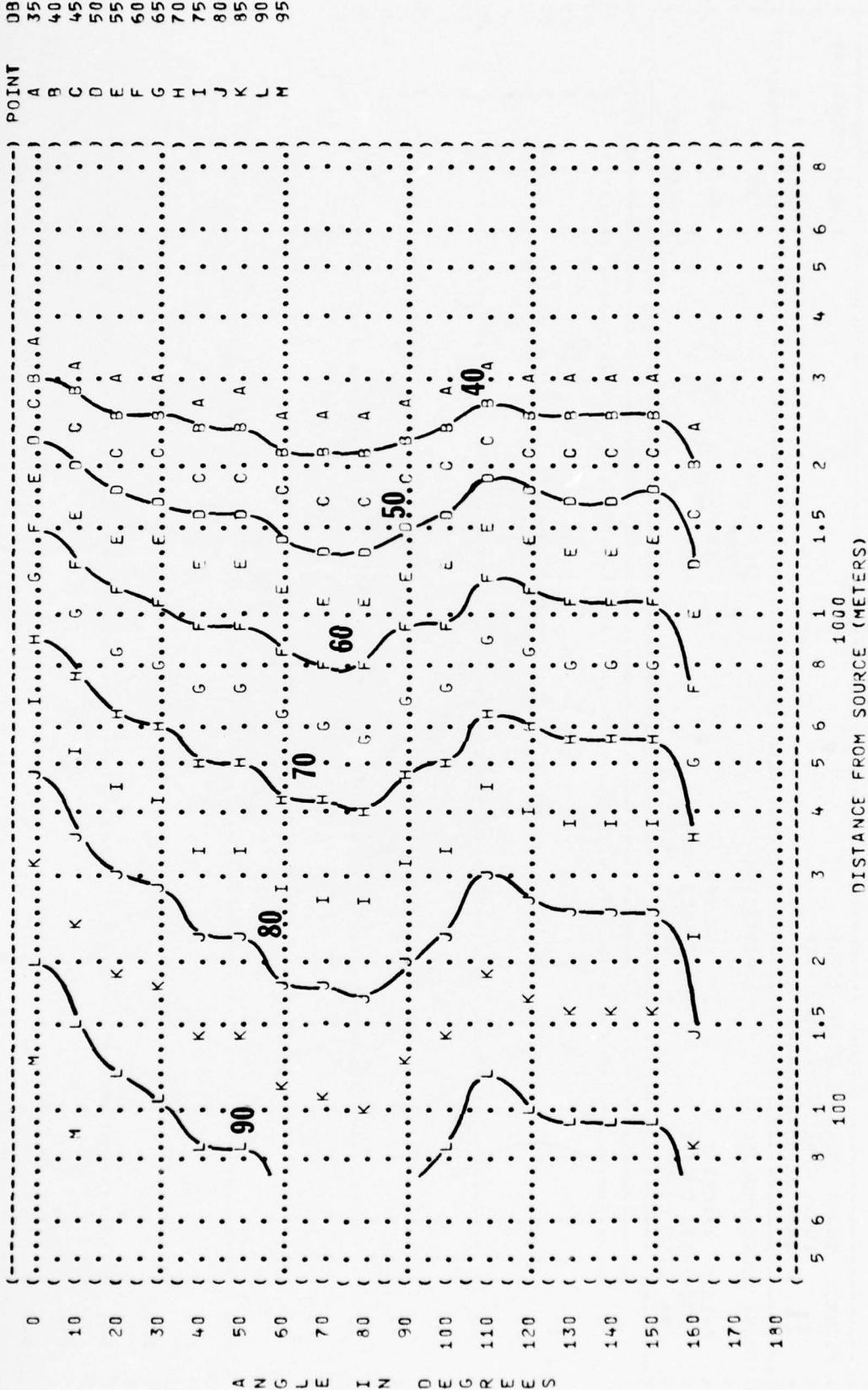


DISTANCE FROM SOURCE (METERS)

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(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4 )
( 1000 HZ OCTAVE BAND ) TEST 75-002-037 )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( ) TEMP = 15 C )
( F-111F AIRCRAFT ) BAR PRESS = .760 M HG )
( YF30-P-100 ENGINE ) SINGLE ENGINE ) 08 MAY 75 )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 23 )
(-----)
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(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (2000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 ((OPERATION:
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 ((85% RPM
 ((TF30-P-100 ENGINE
 ((SINGLE ENGINE
 ((FAR FIELD NOISE
 ((FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 04
 (08 MAY 75
 (PAGE 24



IDENTIFICATION:
OMEGA 1.4

OMEGA 1.4

(OPERATION:

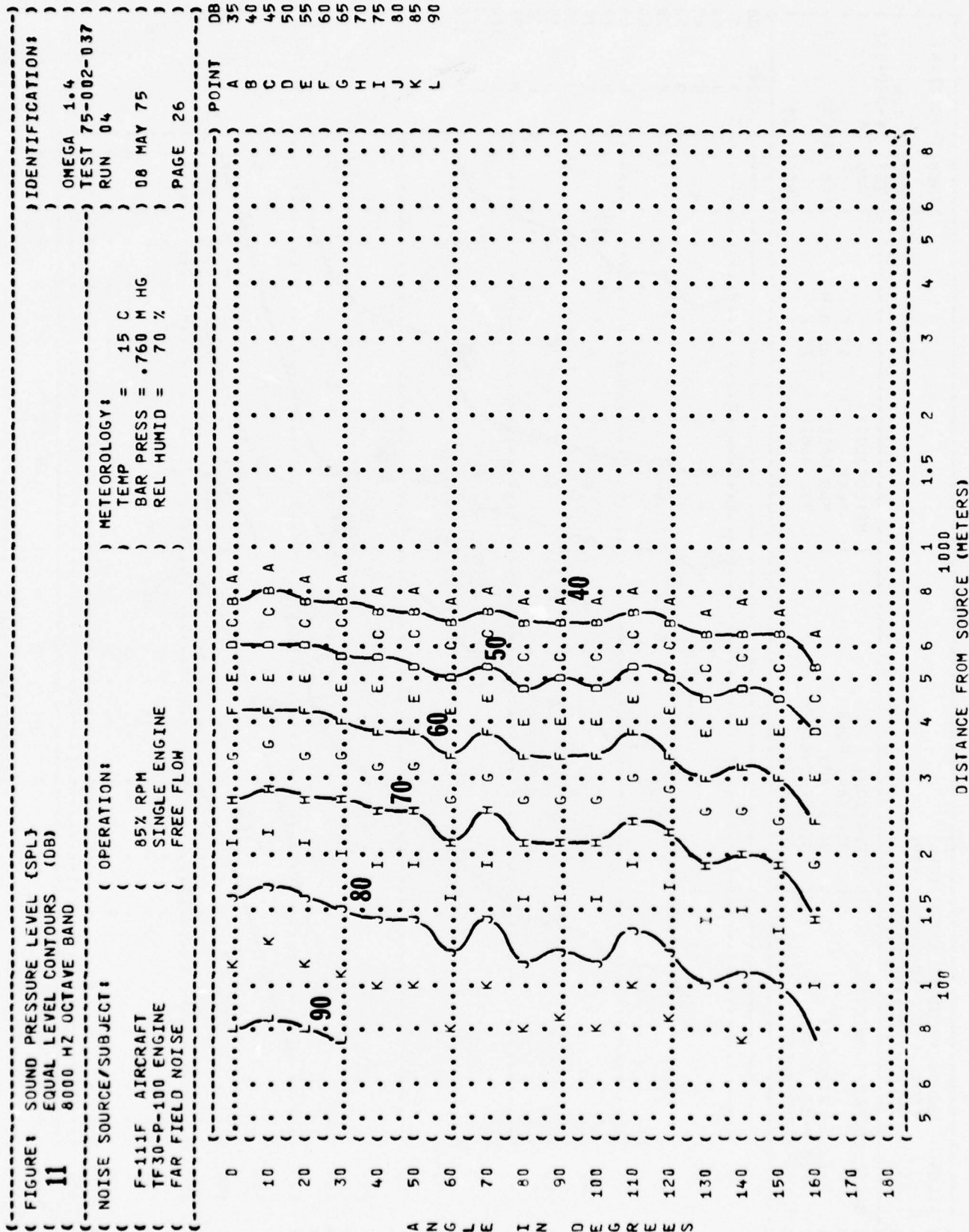
) METEOROLOGY:

(85% RPM
(SINGLE ENGINE
(FREE FLOW
(

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

) PAGE 25





IDENTIFICATION: OMEGA 1.4

OMEGA 1.4

63 HZ OCTAVE BAND

TEST 75-0000
RUN 05

NOISE SOURCE/SUBJECT:

OPERATION:

METEOROLOGY:

MILITARY

TEMP

15 C

F-111F AIRCRAFT

(94.8% RPM

BAR

$\epsilon = .760$ M HG

TF 30-P-100 ENGINE

() SINGLE ENGINE

REL

70%

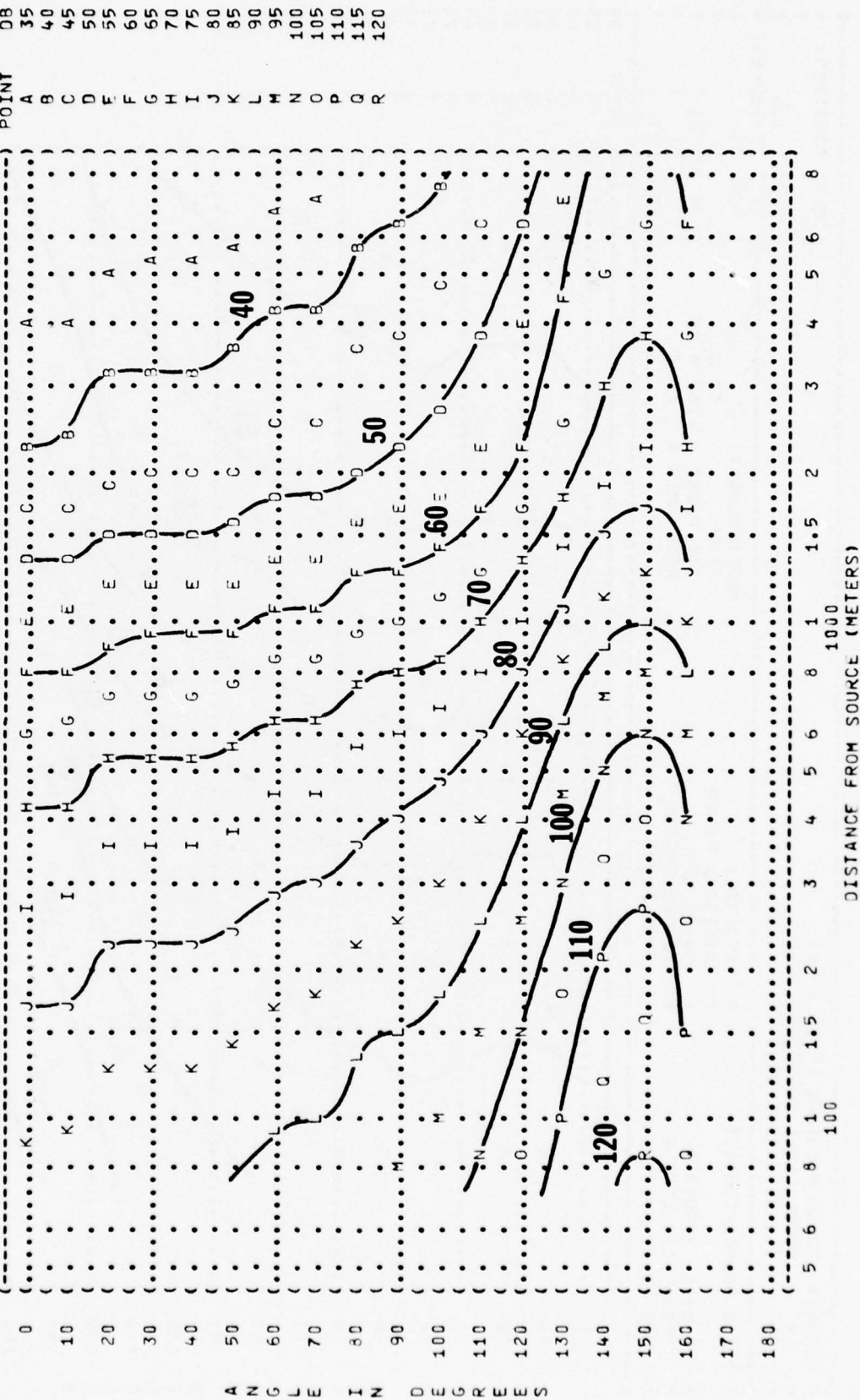
FAR FIELD NOISE

(FREE FLOW)

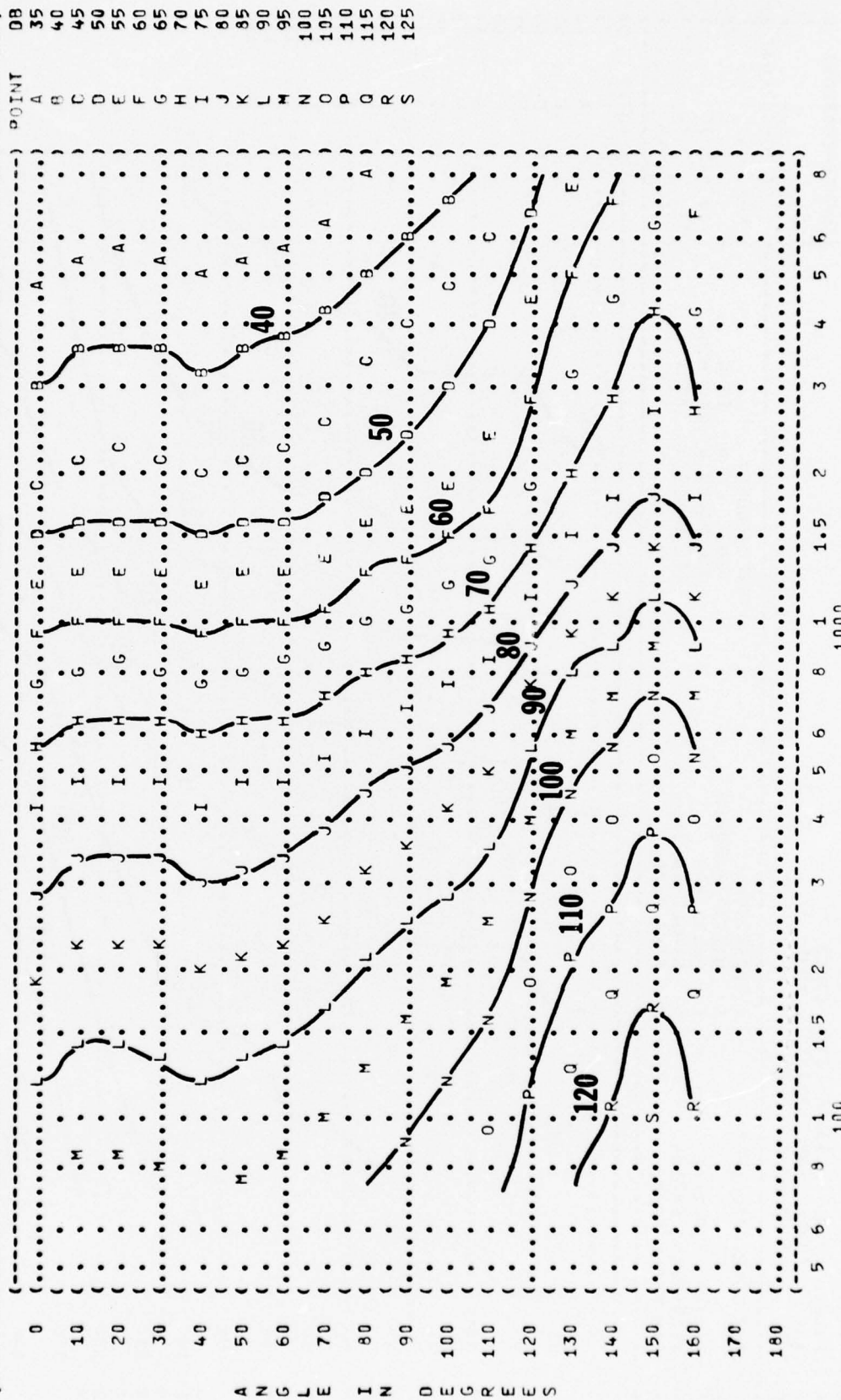
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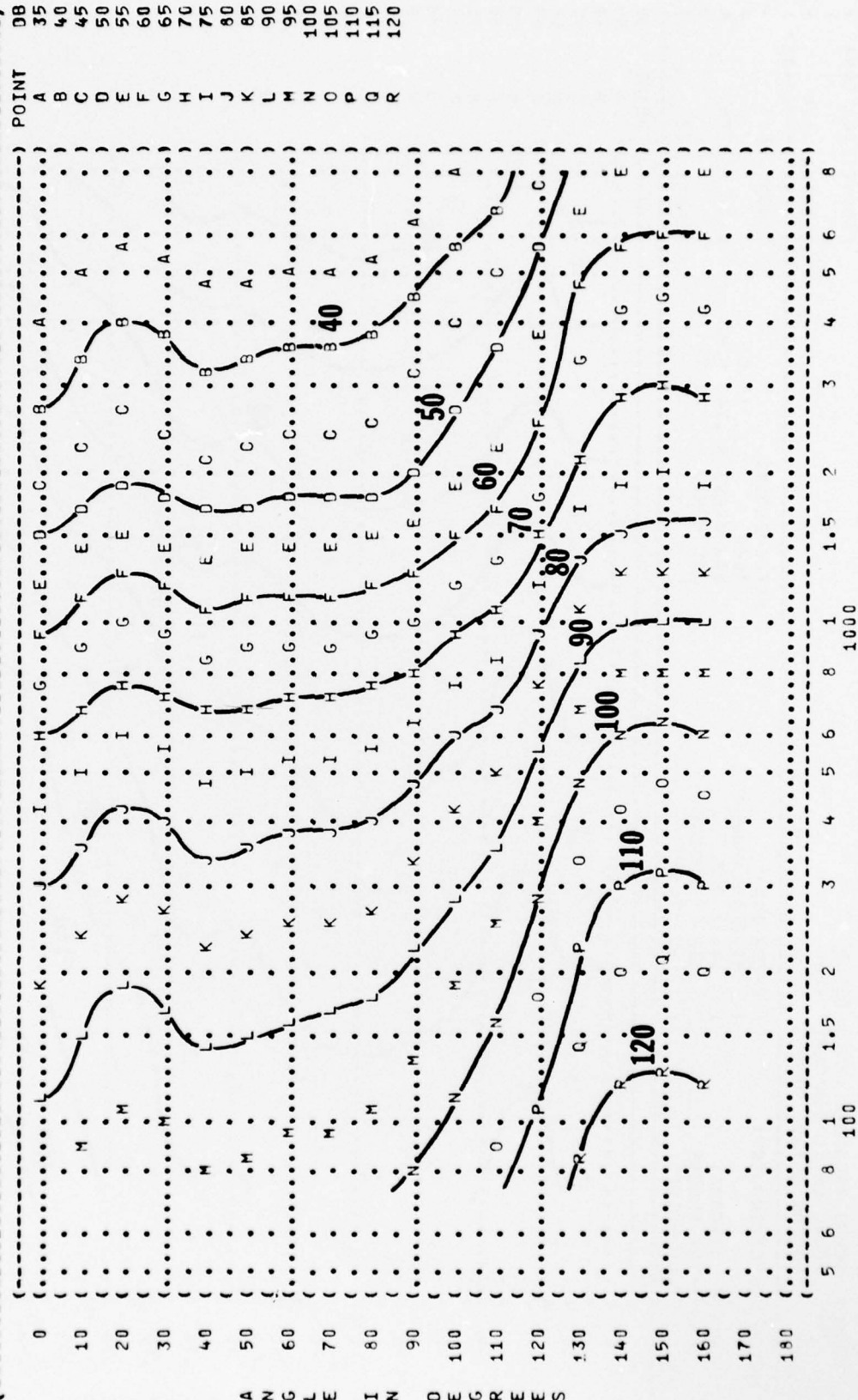


(FIGURE: SOUND PRESSURE LEVEL (SPL)
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 (125 HZ OCTAVE BAND
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 (TF30-P-100 ENGINE (94.8% RPM
 (FAR FIELD NOISE (SINGLE ENGINE
 ((FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 05
 (08 MAY 75
 (PAGE 20

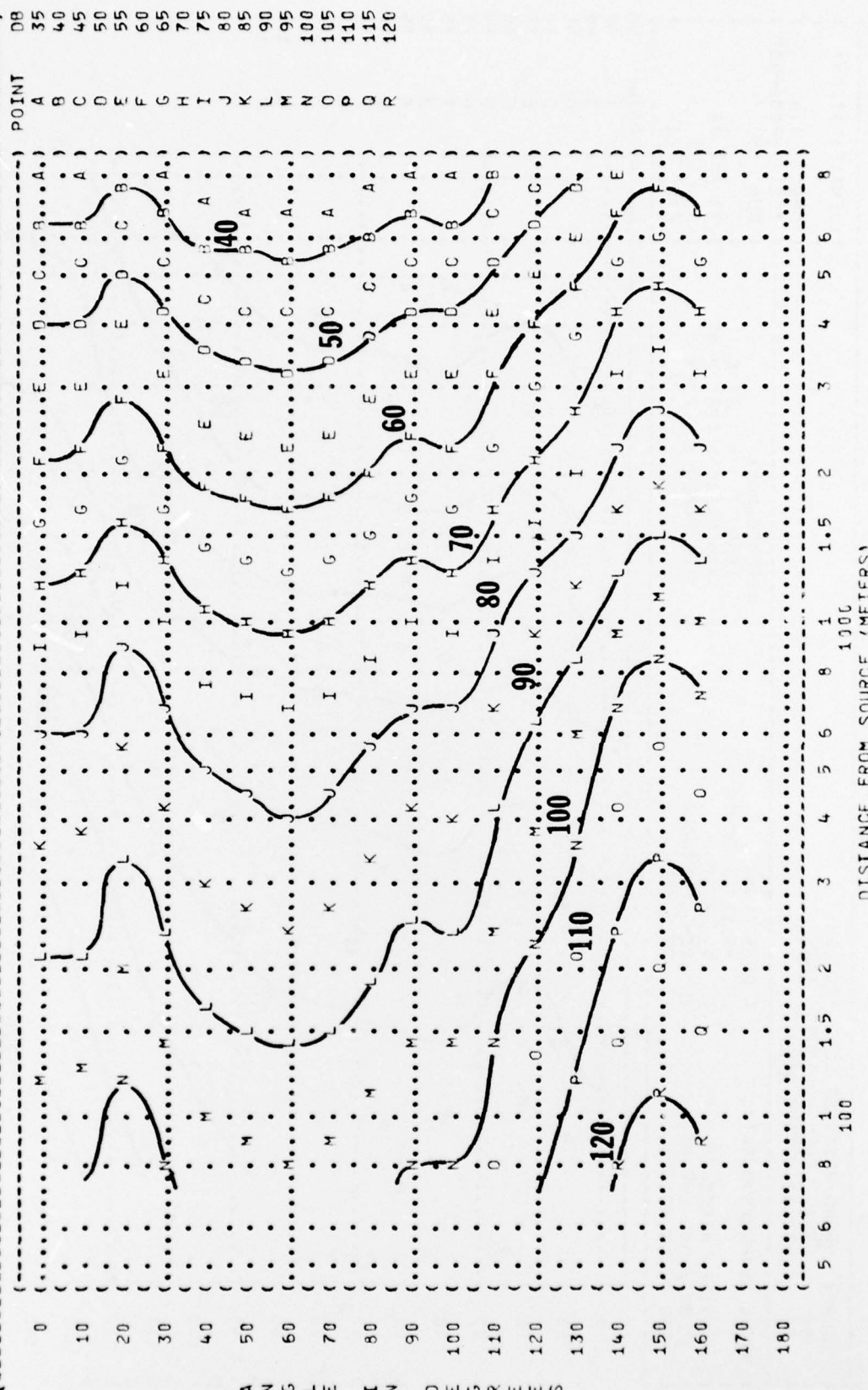


A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
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 (TF30-P-100 ENGINE (94.8% RPM
 (FAR FIELD NOISE (SINGLE ENGINE
 ((FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 21
 (IDENTIFICATION:
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 (TEST 75-002-037
 (RUN 05
 (08 MAY 75
 (

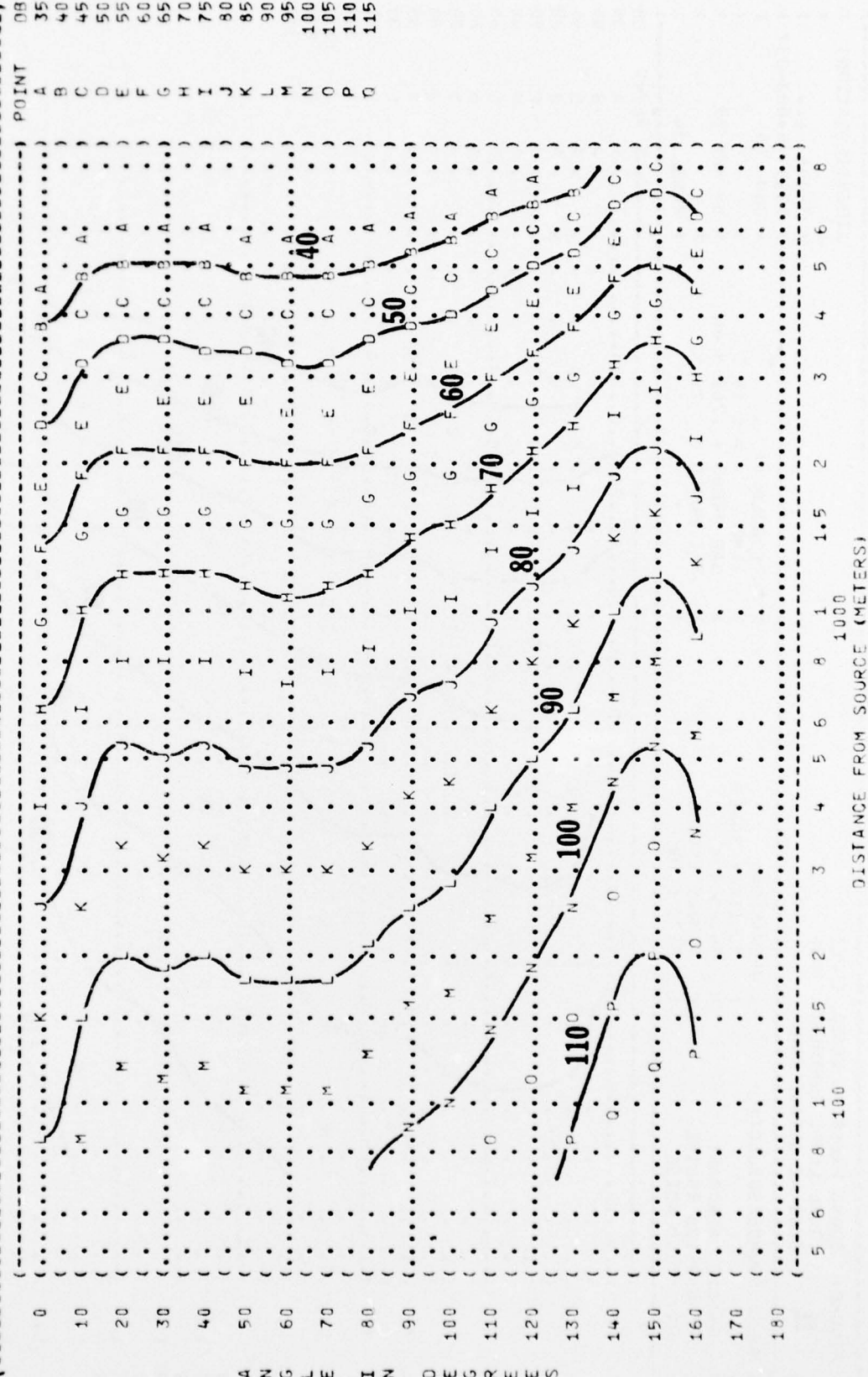


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11)
 (500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MILITARY POWER)
 (94.8% RPM)
 (SINGLE ENGINE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-037)
 (RUN 05)
 (08 MAY 75)
 (PAGE 22)



A N G L E I N D E G R E E S

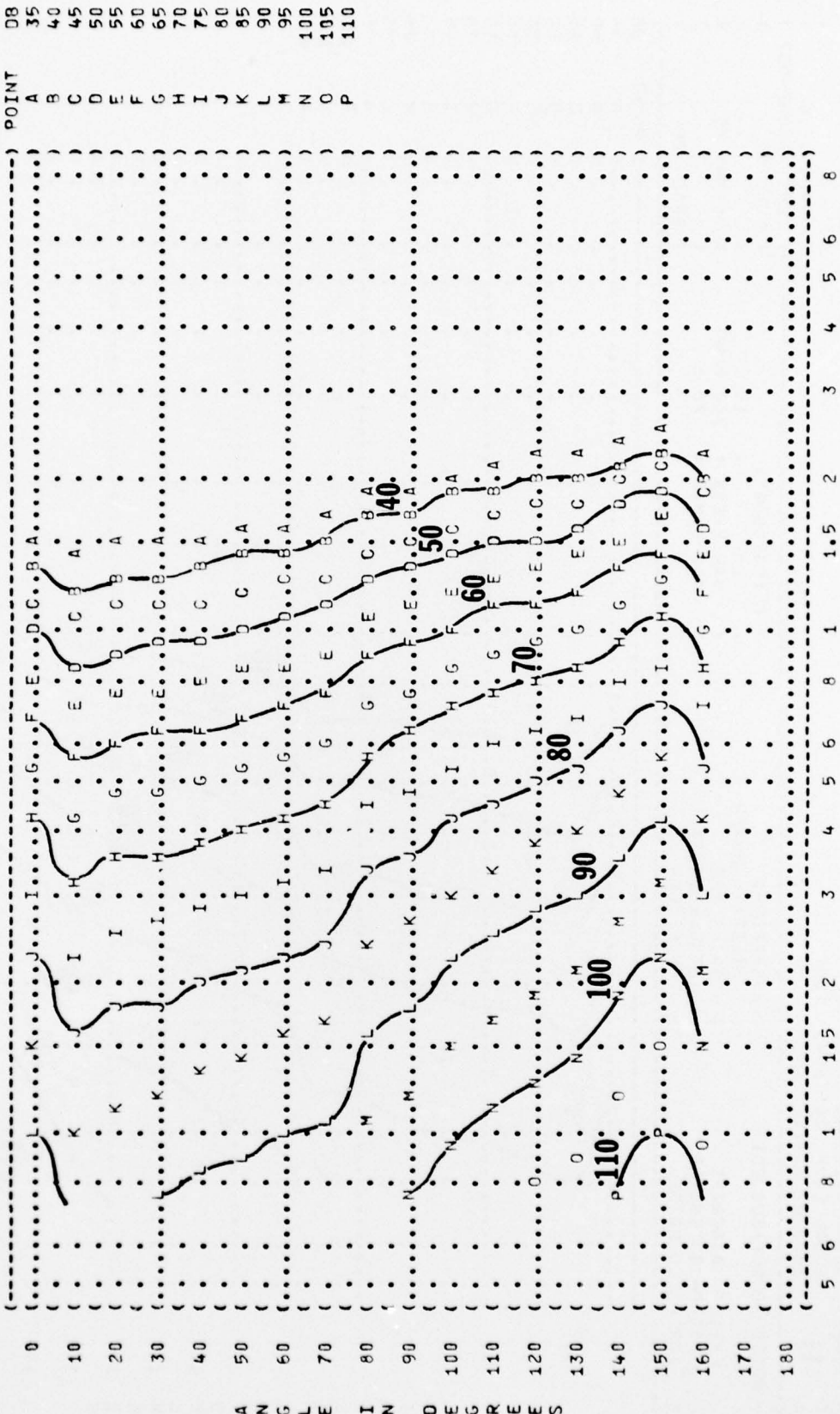
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 (F-111F AIRCRAFT
 (94.8% RPM
 (TF30-P-100 ENGINE
 (SINGLE ENGINE
 (FAR FIELD NOISE
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 05
 (08 MAY 75
 (PAGE 23



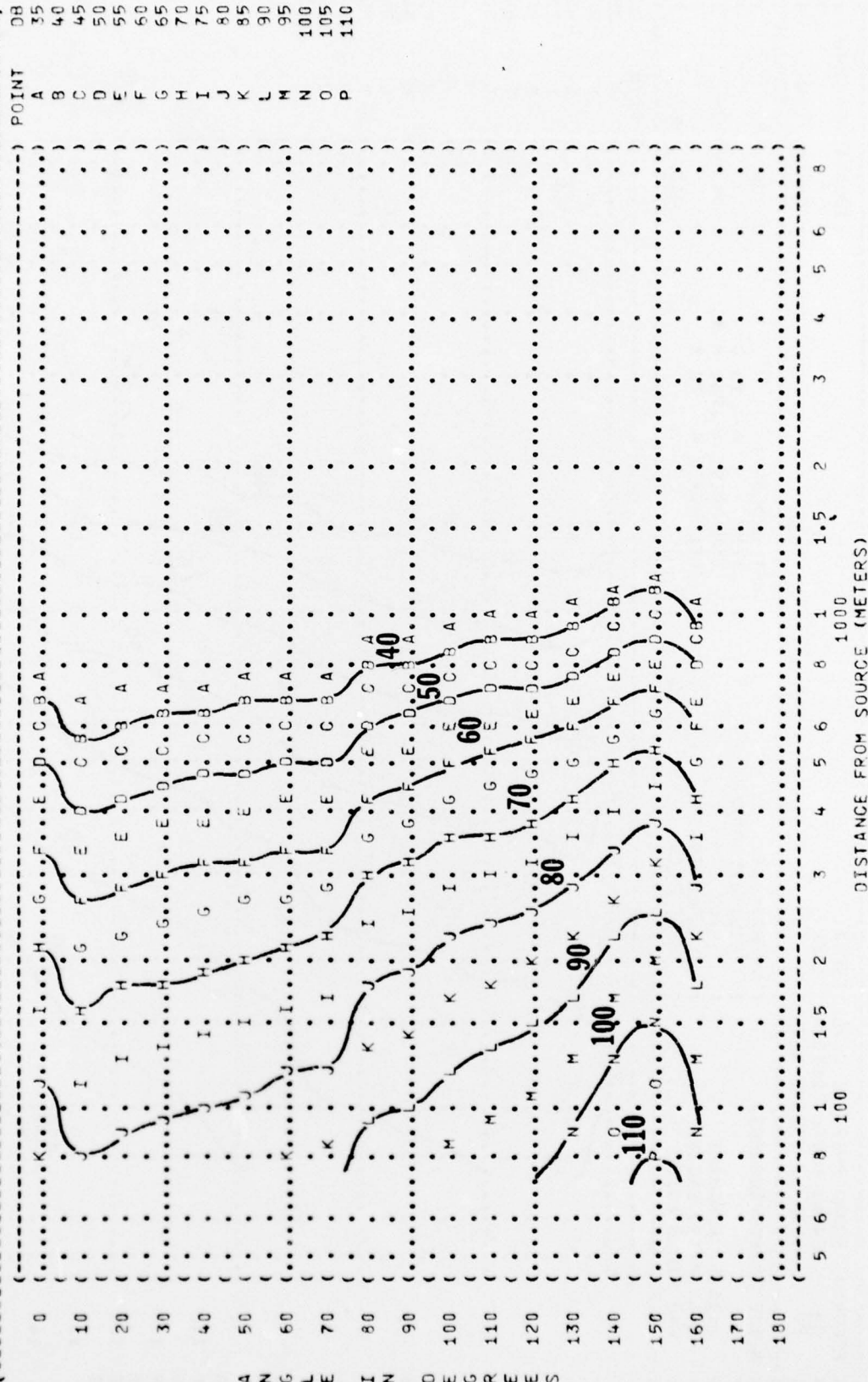
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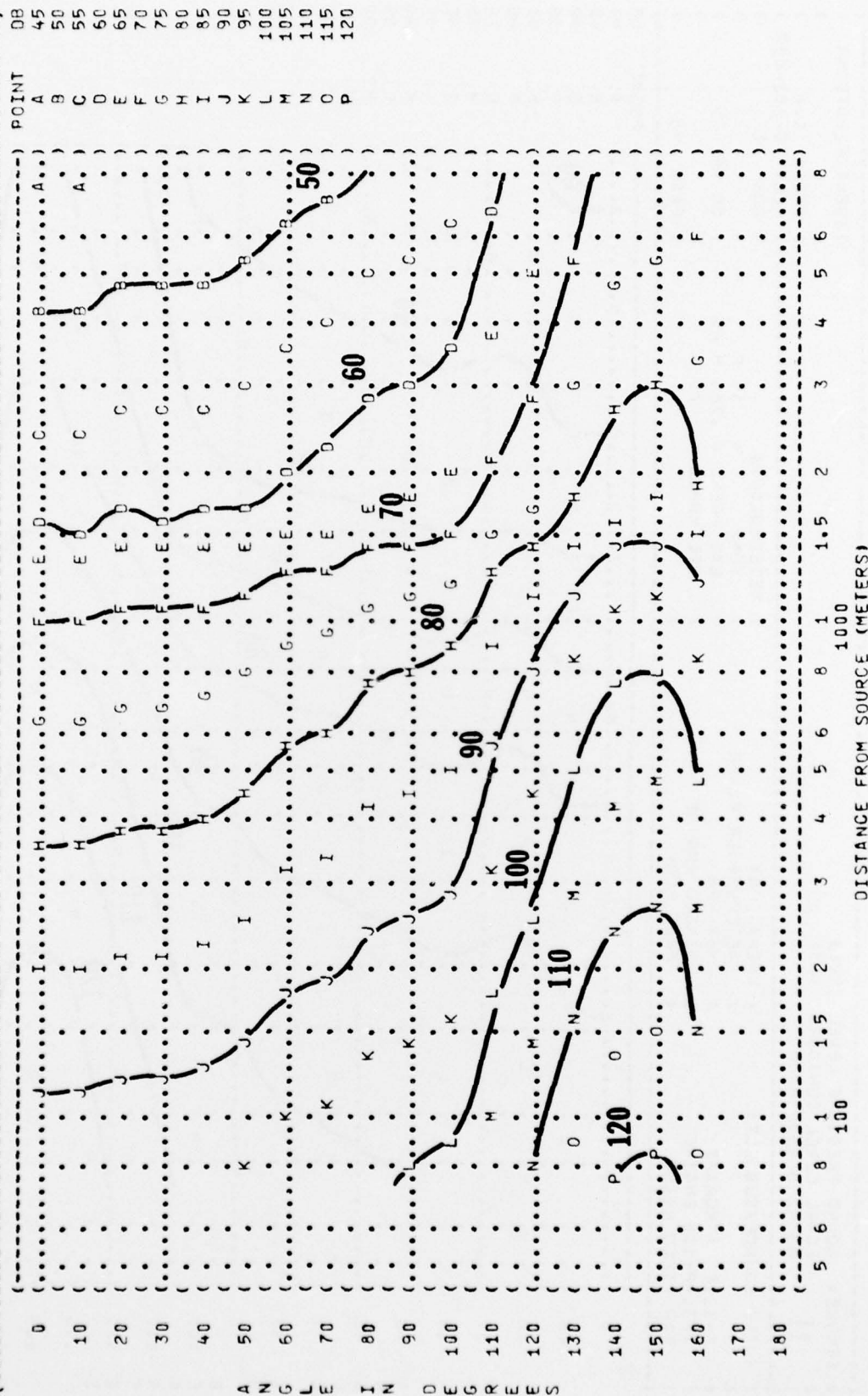
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 (11 EQUAL LEVEL CONTOURS (DB))
 (4000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (F-111F AIRCRAFT)
 (TF30-P-100 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MILITARY POWER)
 (94.8% RPM)
 (SINGLE ENGINE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-037)
 (RUN 05)
 (08 MAY 75)
 (PAGE 25)



DB	POINT
35	A
40	B
45	C
50	D
55	E
60	F
65	G
70	H
75	I
80	J
85	K
90	L
95	M
100	N
105	O
110	P



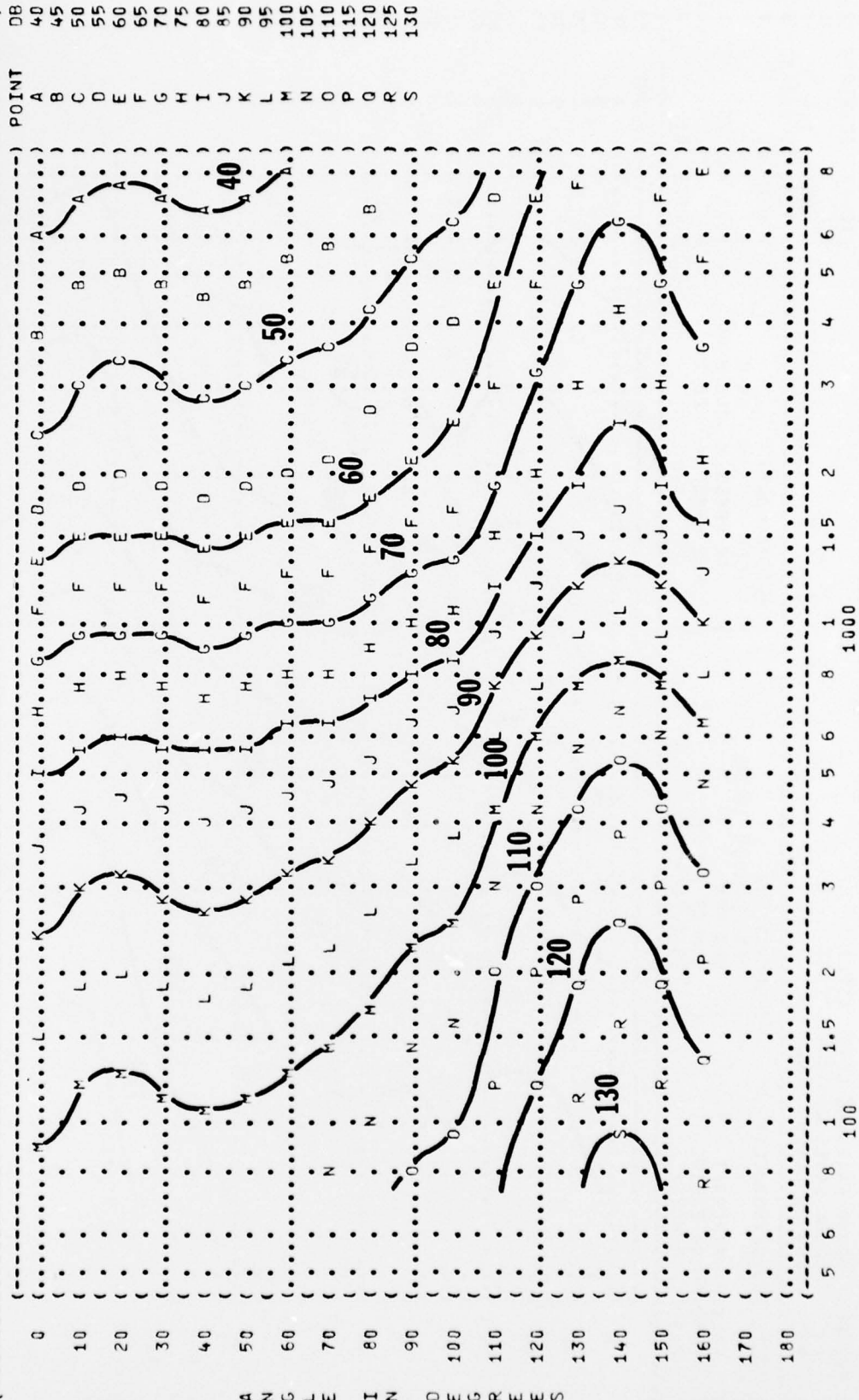
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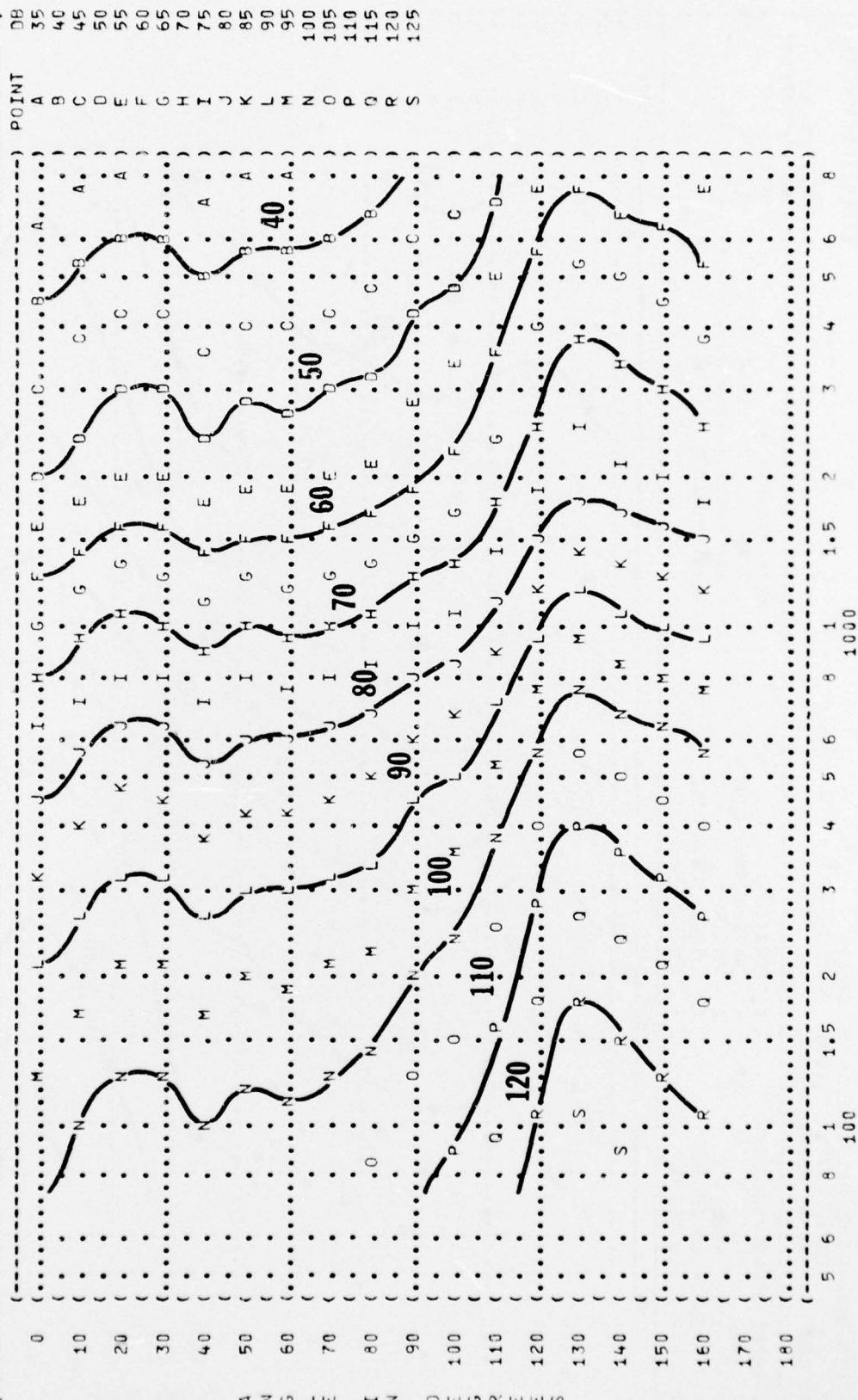
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) 08 MAY 75
)
) PAGE 19



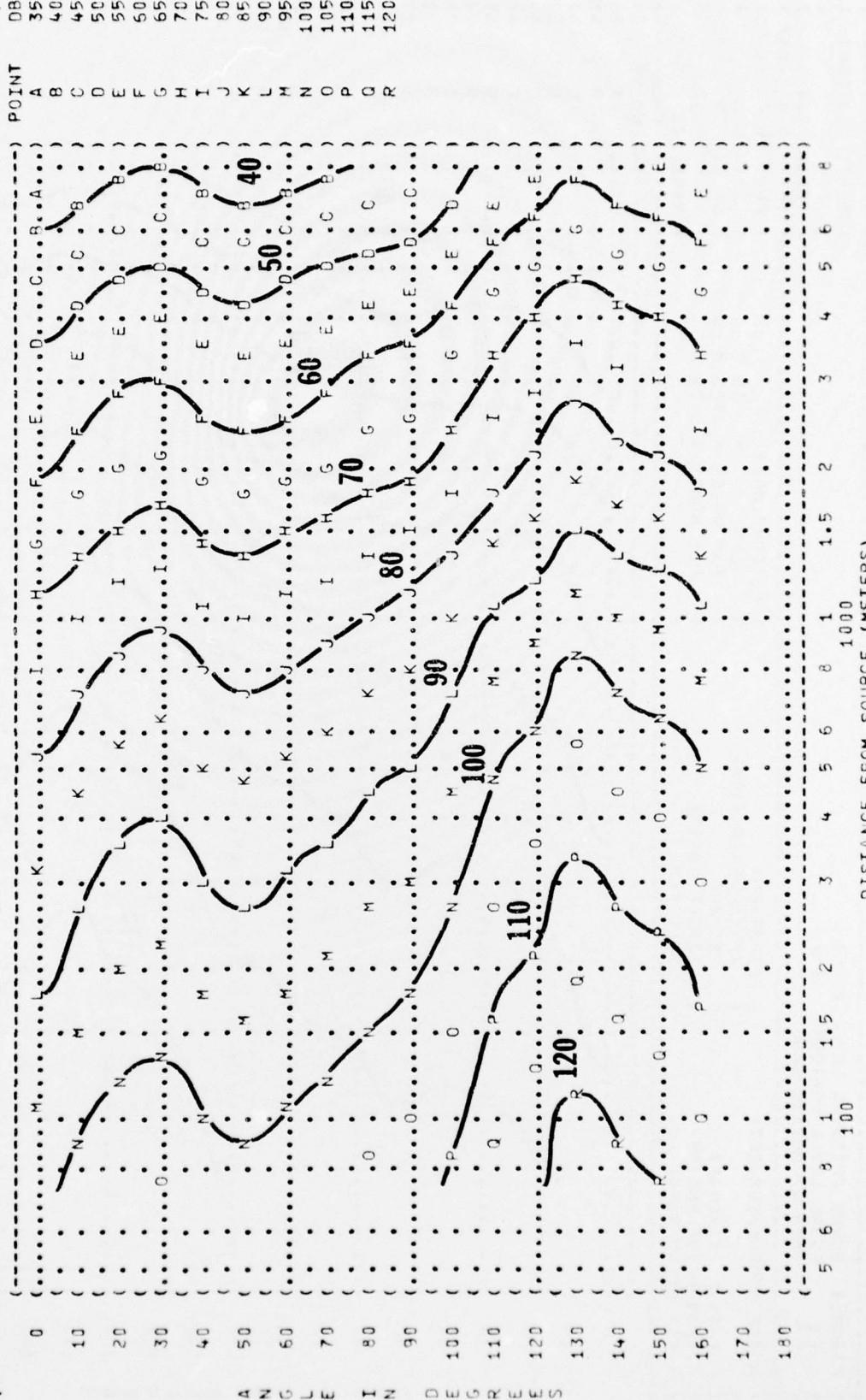
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)
) OMEGA 1.4
) TEST 75-002-037
) RUN 06
)
) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 M HG
) REL HUMID = 70 %
)
) OPERATION:
) AFTERBURNER POWER
) 95% RPM
) SINGLE ENGINE
) FREE FLOW
)
) NOISE SOURCE/SUBJECT:
) F-111F AIRCRAFT
) TF30-P-100 ENGINE
) FAR FIELD NOISE



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (AFTERBURNER POWER
 (TF30-P-100 ENGINE (95% RPM
 (FAR FIELD NOISE (SINGLE ENGINE
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 06
 (08 MAY 75
 (PAGE 21



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 500 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-111F AIRCRAFT (AFTERBURNER POWER
 (TF30-P-100 ENGINE (95% RPM
 (FAR FIELD NOISE (SINGLE ENGINE
 ((FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-037
 (RUN 06
 (08 MAY 75
 (PAGE 22



[illegible]

150

FIGURE: SOUND PRESSURE LEVEL (SPL)
 EQUAL LEVEL CONTOURS (DB)
 2000 HZ OCTAVE BAND

11

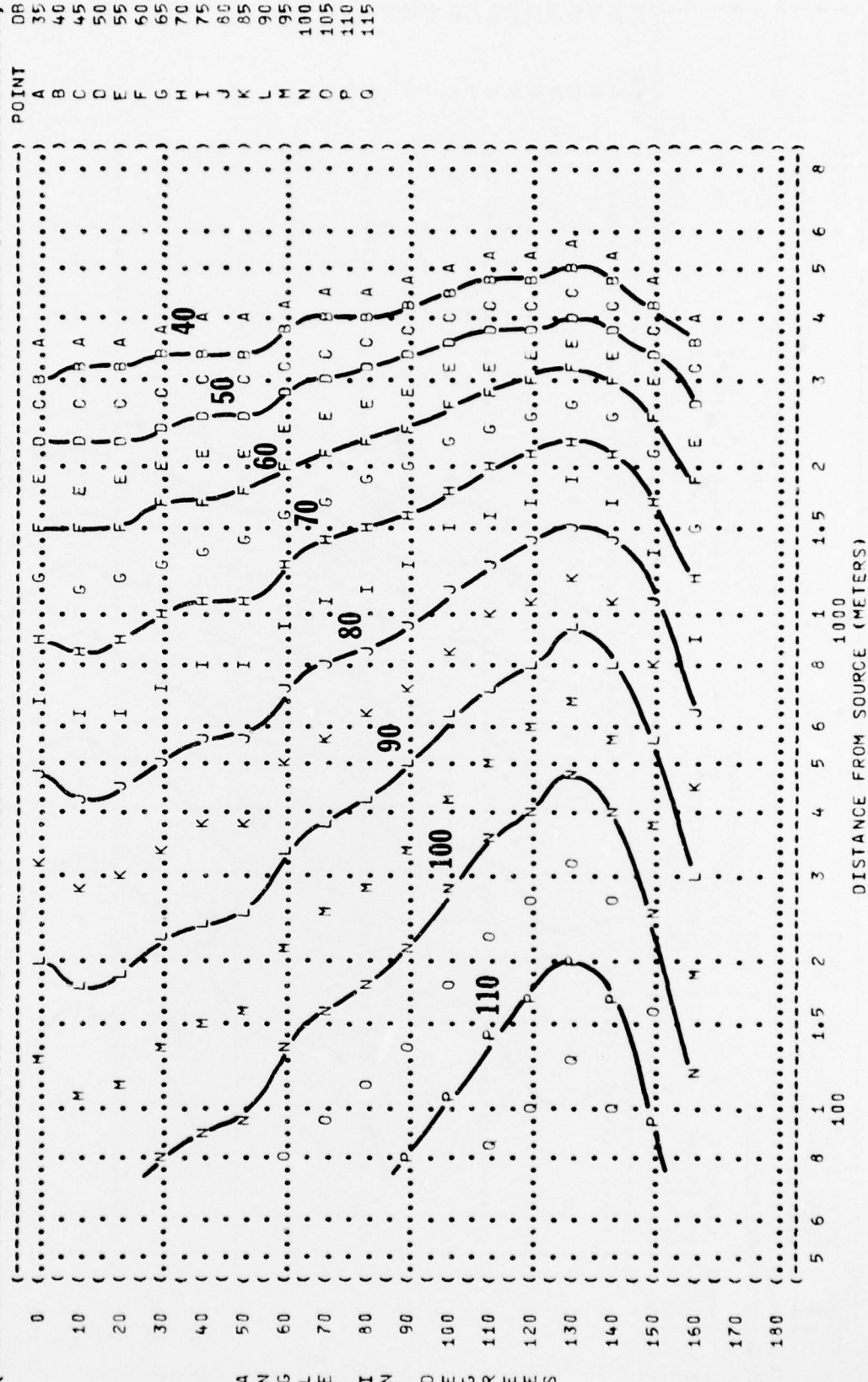
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 OMEGA 1.4
 TEST 75-002-037
 RUN 06

NOISE SOURCE/SUBJECT:
 F-111F AIRCRAFT
 TF30-P-100 ENGINE
 FAR FIELD NOISE

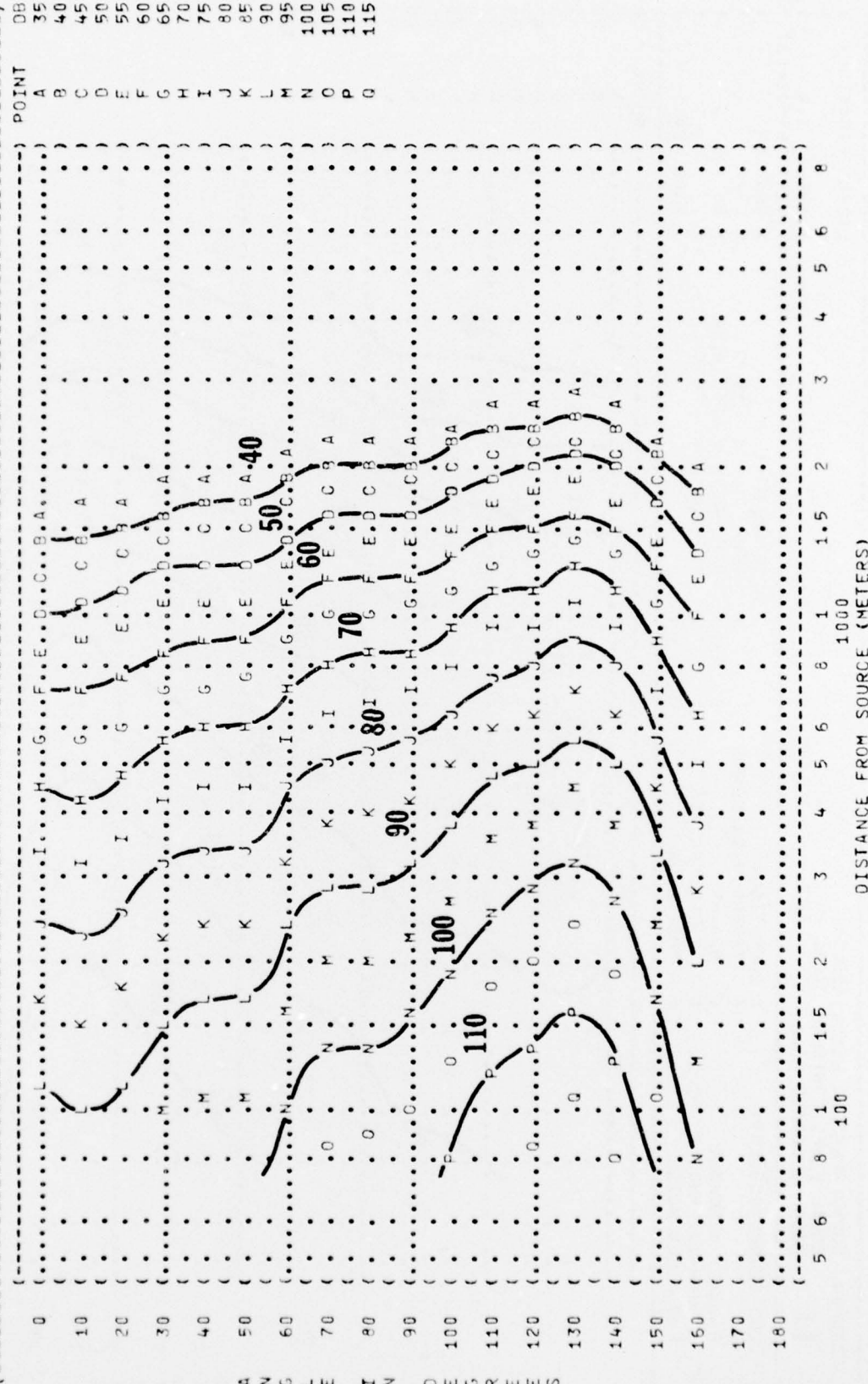
OPERATION:
 AFTERBURNER POWER
 95% RPM
 SINGLE ENGINE
 FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

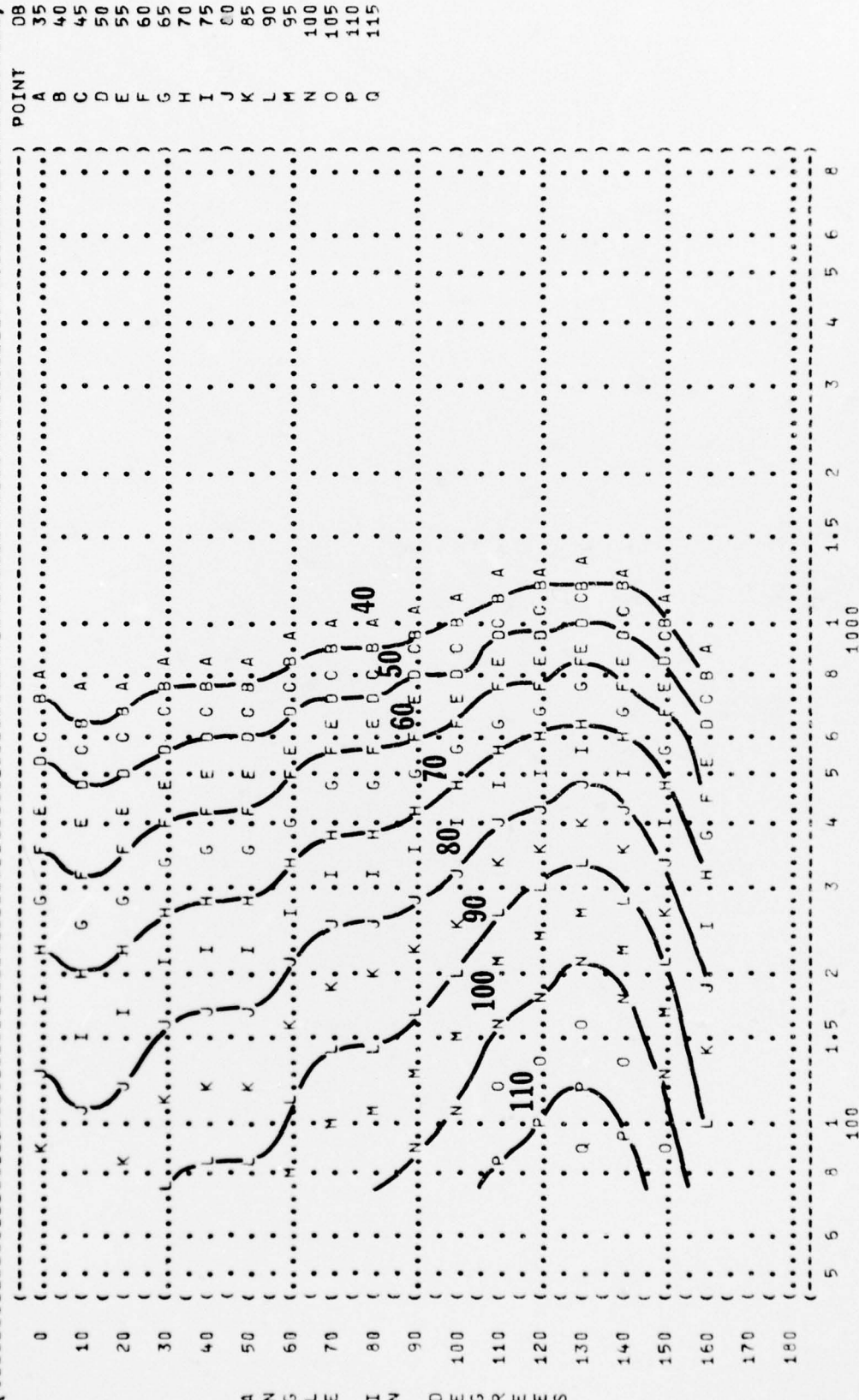
08 MAY 75
 PAGE 24



(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (11))
 (4000 HZ OCTAVE BAND))
 (NOISE SOURCE/SUBJECT:))
 (F-111F AIRCRAFT))
 (TF30-P-100 ENGINE))
 (FAR FIELD NOISE))
 (OPERATION:))
 (AFTERBURNER POWER))
 (95% RPM))
 (SINGLE ENGINE))
 (FREE FLOW))
 (METEOROLOGY:))
 (TEMP = 15 C))
 (BAR PRESS = .760 M HG))
 (REL HUMID = 70 %))
 (RUN 06))
 (08 MAY 75))
 (PAGE 25))



FIGURE#	SOUND PRESSURE LEVEL (SPL)	IDENTIFICATION#
11	EQUAL LEVEL CONTOURS (DB)	
	8000 HZ OCTAVE BAND	OMEGA 1.4
		TEST 75-002-037
NOISE SOURCE/SUBJECT:	OPERATION#	RUN 06
	AFTERBURNER POWER	
F-111F AIRCRAFT	95% RPM	TEMP = 15 C
TF30-P-100 ENGINE	SINGLE ENGINE	BAR PRESS = .760 M HG
FAR FIELD NOISE	FREE FLOW	REL HUMID = 70 %
		PAGE 26



ANGIE IN DEWEES